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ABSTRACT

A manual for training paraprofessionals to provide home intervention and instruction to mothers of handicapped infants and preschool children is presented. The following objectives of the Saskatoon, Saskatchewan, project are described: teaching mothers about child development; obtaining information about each child and the child's environment; and enhancing parent-child relationships and parenting skills. The content of each of the 9 days of paraprofessional training is outlined. The first 6 days include a general introduction to the preschool project and an overview of normal child development and learning and handicapping conditions. The last 3 days of the training program consist of a hands-on workshop to provide experience resembling the type of contact parent partners would likely have with the children. In addition, observations based on 2 years of operation are offered regarding duties and roles of the paraprofessionals and outcomes for parents. Appendices include the following materials: assumptions about the teaching-learning process; a chart of developmental tasks posited by Piaget, Freud, Cratty, and Razran; information on child behaviors (self-help, motor, language, and socialization); a list of language skills and associated learning activities; a list of developmental stages of normal speech and oral language; a list of followup inservice training activities; a list of materials used by parents and paraprofessionals; a bibliography of about 60 publications; a list of 12 films; and an article on learning theory. (SEW)

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THE SEECC PRE-SCHOOL PROJECT: PARENT-PARTNER TRAINING PROGRAM

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The work presented here is a description of the training program developed for the SEECC Pre-School Project. This project was part of a larger project, the Saskatoon Region Project, under the direction of Dr. John McLeod. The major focus of the total project was the delivery of services to handicapped children in sparsely populated areas. The SEECC Pre-School Project delivered educational services to rural handicapped pre-school children. The SEECC Pre-School Project was a home-based intervention program based on the Portage Project model. Para-professionals were used to support and enhance the teaching abilities of mothers in their daily interactions with their handicapped infants and pre-school children. This "manual" describes the training process of these para-professionals, whom we called Parent-Partners.

Special acknowledgements and thanks go to Dr. John McLeod, Director of the Institute of Child Guidance and Development, University of Saskatchewan; the staff of the Alvin Buckwold Centre, University of Saskatchewan; the staff of the Pre-School Centre, Institute of Child Guidance and Development; members of the Department of Social Services; Public Health Nurses; teachers and principals of the Rosthern, Saskatoon East, and Saskatoon West school units; parents and friends of handicapped pre-school children, the children themselves; and many other persons and agencies. Without the support and help of these people, this project and this manual would not have been completed.

A special thanks goes to Rose Hnatiuk, Dianna Penner, Christine Sutton, and Doris Urban, the Parent-Partners who worked directly with the

children and their mothers and who originally trained in the program presented here. These women and their skills of working with children and mothers were the underlying foundation on which this project grew. Without them neither the project nor this manual would have been developed.

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Individual psychological differences, especially intellectual differences, have captured the interest of educators and researchers for decades (Skeels & Dye, 1939; Shodak & Skeels, 1949; Kirk, 1958; Hunt, 1961; Bloom, 1964; Anastasi, 1965; Skeels, 1966; Levenstein, 1970). In recent years there has been increasing interest on the part of both medical personnel and educators in preventing or at least minimizing the effects of inborn and environmental conditions which are believed to be the cause of mental and physical handicaps. A handicapped child is at risk for delay or impairment at every state and in all areas of development. Development is interdependent and cumulative, so delay or impairment in development in any one stage or area places the child at risk for delay or impairment of development in every other stage or area. The SEECC Preschool Proje t was concerned primarily with preventing or minimizing the effects of conditions which can cause marked deficiencies in later school performance. To this end, attention was focussed on the effectiveness of educational intervention with preschool handicapped children.

Educational Handicap and Socio-Cultural Disadvantage

Many of the adverse psychological consequences of socio-cultural disadvantage can also occur with an intrinsic handicapping condition. Socio-culturally deprived children are at a disadvantage for learning how to function competitively with children from the mainstream of society. Handicapped children face the same difficulty and their problem is particularly pronounced because their parents have to know more, do more and endure more than do parents of normally developing children; and they must know, do and endure even while under the chronic emotional stress, and even grief, associated with being the parent of a handicapped child.

Socio-cultural disadvantage and handicap are compounded for one large group of children, namely the mildly mentally handicapped. These children and their parents are disproportionately represented in that section of the community which suffers social, economic and cultural difference and/or disadvantage. In a very real sense, disadvantaged people are handicapped people, so it is not surprising that much of what was learned from the earliest intervention studies--which were concerned primarily with disadvantaged minority groups--has also proved to be applicable to handicapped children.

In recent years, research attention has been directed to providing early educational intervention for children across the whole spectrum of handicapping conditions (Shearer & Shearer, 1972; Karnes, 1973; Jordan & Dailey, 1973) often through the combined efforts of workers from both education and medicine. The importance of the early years and the significant effects that can result from parent education have also come to be recognized and firmly accepted for normally developing children (White, 1971, 1973).

From the outset of the SEECC Preschool Project, it was acknowledged that the findings of early intervention studies could provide invaluable guidance, whether the studies had been concerned with a specific sub-group of preschool children or with preschool children as a whole. As a result, an eclectic approach was adopted in methodologies with children in working with their parents and in the specific training program which was developed for home teachers, the "Parent Partners."

Philosophy and Goals

The basic premise underlying the intervention program is the belief that parents are the first, and often the best, teachers that a child will ever have. In addition, all interactions with the parent and the child were continuously subjected to the question: "What are we doing?"

Answers to this question were acceptable insofar as they satisfied one of the three major goals of the project, namely:

1. We will teach real knowledge and skills concerning child development;

2. We will learn as much as possible about each individual child and each child's environmental situation; and

3. We will attempt to enhance the relationship between the child and his or her parent(s) and to strengthen parental self-confidence and ability to manage and enhance each child's development.

Knowledge of child development. The first objective involved the presentation of information about child development and teaching techniques which are not ordinarily necessary for parents in the course of rearing normally developing children. This does not mean that parents in general would not benefit from these skills, but that normally developing children are more easily able to survive the lack of these parental skills and knowledge than are handicapped children. In particular, efforts were directed toward the following areas:

- self-help skills;
- thinking, symbolization, and problem-solving;
- social relationships, independence and the development of a positive self-concept;
- physical and motor development; and
- communication skills.

In addition, attention was paid to the sequential development of skills and to planning the "next step" in each skill area through a teaching-consulting relationship with each parent.

Learning about each child. The second objective was tackled in a context which recognized the parents as full partners in the endeavor. Parents have much to teach us about children, particularly the parents of handicapped children. At first, parents had to be actively encouraged to share their information, and to be actively convinced of not merely a willingness, but an eagerness, to hear what they had to say. After parents came to realize that they were being regarded seriously as partners in the program (a process that did not take long in most cases), they were willing to share and become more open in expressing their concerns and to be more receptive to new ideas and suggestions. In the majority of cases, parents felt fully a part of the program. They perceived the SEECC project personnel as a resource; but they perceived themselves as the primary agents of educational intervention.

Enhancing parental self-confidence. The third objective was met partly as a result of achieving the second objective, through the interchange of information and ideas in a climate of shared responsibility. Parents' self-confidence also grew as a result of their children's observable progress. As parents saw their children progressing, both in terms of obvious changes from week to week and in terms of visible milestones which indicated skills learned and accomplished, they grew more confident of their ability to manage and improve a difficult situation. Thus, the children themselves helped to teach their parents to believe in their ability to parent a handicapped child. This, in turn, enhanced the relationship and strengthened the bond between child and parent.

Special Needs

Handicapped children have several needs which are more intense than are those found in normally developing children (Mittler, 1974). Some of which arise out of the specific condition of the individual child. Special provisions are necessary to meet these needs. For example, there must be adequate diagnosis of the child's problem. This diagnosis includes both medical and psycho-educational procedures. Subsequent to diagnosis, specially planned educational interventions have to be provided. Parents must play an integral role in both diagnostic and educational programming procedures.

Other needs involve the family as a whole. There are needs arising out of the practical problems of child care; there is a need for access to information about the availability of services and the right to such services; there are adjustment needs of parents and siblings of the handicapped child as well as of the handicapped child himself; and there

are needs which result from parental exhaustion and anxiety. In many cases, there is the problem of extra financial expenses which occur and perhaps the necessity of one parent acting continuously as a full-time provider of child care.

Needs can also arise because of the absence of any clear direction, guidance and planning for the handicapped child. These needs result from the isolation of the family and an accompanying fear of the unknown. Over the years, the advice of professionals might not always have proven helpful. Sometimes it has been too vague, or has assumed knowledge on the part of parents which they did not possess. Occasionally professional advice might have been inappropriate.

The present project involved a sharing of knowledge and skill, a willingness to listen and an overtly expressed belief and encouragement of parents' ability to teach and enhance the development of their own children. By being aware of the extensive range of possible needs in any situation where a handicapping condition exists and by recognizing the critical fact that parents must not be robbed of the opportunity to solve these problems, it is believed that the present project has helped parents to do what they were perfectly capable of doing. This is not to say that all needs of every child and every family in the project have been met in every respect.

Levenstein (1970) gave the following directions to the "toy demonstrators" who entered homes and worked with the mothers in her research project:

> Treat the mother as a colleague in a joint endeavor on behalf of the child . . . . Share your verbal stimulation techniques with her by demonstrating them in play with her child; then draw her into the play, and take a secondary role as soon as you can while she repeats and elaborates what she has seen you do. Encourage her to play and read with the child between Home Sessions. Keep constantly in mind that the child's primary and continuing educational relationship is with his mother; do all you can to enhance that relationship.

A child's development, emotional, cognitive and in every other way, depends primarily on the development, maintenance and quality of his or her relationship with the primary caretaker in his life. An attempt was made, therefore, to follow Levenstein's prescription in interactions with parents and children enrolled in the preschool project. This insight and basic philosophy, together with a recognition of the needs described earlier formed the basis for the objectives of the training program for Parent Partners.

The Training Program

The Parent Partners

During the first year of the project, there were three paid and three volunteer Parent Partners. This combination of workers proved to be an interesting and resourceful group. The paid workers were each trained to handle a case-load of eight to ten children. The volunteers were trained to work with one or two children only. In general, the paid workers were from the rural communities surrounding Saskatoon which were being served by this project. All had school-age children of their own. Though intelligent and resourceful, these rural workers had, on average, fewer years of education than the volunteers. The volunteers were either urban-dwellers or were not indigenous to the rural areas serviced by the project. Two of the three volunteers had school-aged children. During the second year of the project, Parent Partners were all paid workers.

Content of the Program

The program for the Parent Partners extended over nine full days of training plus continued in-service (see Appendix B) throughout the duration of the project. The first six days of the actual training program included a general introduction to normal child development and learning, an overview of handicapping conditions, and a general description of the specific preschool project. Topics were presented by a variety of speakers, through observations of children, and by means of films and discussion. The last three days of the training program consisted of a "hands-on" workshop using Portage Project materials and methodologies (Shearer & Shearer, 1972), as well as necessary adaptations for the Saskatoon project.

Figures 5(a), 5(b) and 5(c) depict the three identifiable blocks of the training program in outline, while there is further elaboration of the contents of each training day on pages 30-50. Neither the timetable nor the elaborated description of content is intended to be specifically applicable to, or appropriate for, others who might be considering the implementation of a project with similar goals. The timetable and day-to-day specifications which follow are general descriptions of the training program which was evolved for the Saskatoon Region Rural Preschool Project. Particular details of any future project which might model itself on the present project would have to be developed by its planners according to the background and needs of the workers entering the training program, and the needs, situation and characteristics of the children and families who ultimately would be served.

Day 1	Day 2	Day 3
1. Introduction and "get acquainted" session 2. Description of Institute Early Childhood Centre including integration of handicapped children (lecture and discussion) 3. Observation of children at the Institute Early Childhood Centre 4. Overview of SEECC Preschool Project (lecture and discussion) 5. Overview of early intervention (lecture and discussion) a. What is intervention? b. Why *early* intervention? c. Where should intervention take place? d. How do we go about it? 6. Overview of specific early intervention projects (lecture and discussion)	1. Introduction to normal child development (lecture and discussion) 2. Significant terms: a. heredity b. environment c. growth and development d. maturation e. learning f. readiness 3. Content: Areas of development a. sensory-perceptual-motor b. cognitive c. affective d. conative e. Portage Project areas 4. Content: Theories a. Piaget b. Freud/Eriksen c. Kagan d. Kohlberg 5. Film: *Principles of Development*	1. Piaget's theory in greater depth (lecture and discussion) 2. Film: *Cognitive Development* (Piaget) 3. Formulation of cognitive development: Ypsilanti Home Teaching Program (lecture and discussion) 4. Language (lecture and discussion) a. acquisition b. development 5. Film: *Language Development* 6. Film: *Jennifer is a Lady*

Figure 5(a). Block No. 1 of the Training Program: Introduction

Day 4	Day 5	Day 6
1. Observation of preschool, Saskatchewan School for the Deaf 2. Parent Involvement (lecture and discussion) 3. Observation of multiply handicapped children in a movement education class 4. Film: *Can You Hear Me?* 5. Biological Changes in Infancy (lecture and discussion) a. prenatal environmental influences b. the newborn c. maturational stages in infancy d. perceptual-motor development e. social development	1. Preschool and Infant Stimulation Programs: Alvin Buckwold Centre (panel presentation and discussion) 2. Videotape: *Working with Multiply Handicapped Children and Their Parents* 3. Discussion a. working with parents b. working with handicapped children 4. Continuation of perceptual-motor development and social development (lecture and discussion) 5. Film: *Development* 6. Film: *The Terrible Twos and Trusting Threes*	1. Prenatal influences on development (lecture and discussion) a. genetic b. environmental 2. Teaching and Learning (lecture and discussion) 3. "Learning Theory" (lecture and discussion) a. learning b. reinforcement c. positive reinforcer d. negative reinforcer e. punishment 4. Behaviour Modification 5. Training Self-Help Skills 6. Film: *Genesis*

Figure 5(b). · Block No. 2 of the Training Program: Specifics

Day 7	Day 8	Day 9
1. Assessment a. presentation of Alpern-Boll Developmental Profile b. presentation of Portage Check List c. demonstration administration of both instruments d. practice in administration and scoring 2. Administration of Alpern-Boll by each Parent Partner to a preschool child 3. Informal observation of children 4. Discussion	1. Home Teaching a. working with parents in their own homes b. relating findings from assessment to development of educational objectives and use of curriculum materials c. behavioural objectives d. task analysis e. reinforcement f. physical, visual, verbal teaching cues g. correction procedures h. attending, imitiation, compliance i. charting, reporting, record keeping j. use of Portage Curriculum Guide as a gyide k. development of materials for individual needs 2. Discussion	

Figure 5(c). Block No. 3 of the Training Program: Practicum

Day One

The Parent Partners and the co-ordinator of the home-based intervention program met over coffee to get acquainted. This was followed by a visit to the Early Childhood Centre of the Institute of Child Guidance and Development, where preschool children, including three handicapped children, were observed in their various activities. The observation period was followed by a discussion with the Early Childhood Centre administrator. Special emphasis was directed toward the handicapped children attending the Centre. Topics such as their general functioning in the preschool setting, special help provided and their acceptance by other children were discussed.

Individual differences between children in general and among the Centre children in particular were examined. Special note was taken of the fact that individual differences were as obvious in the "normal" children as in the handicapped children. The Parent Partners were particularly interested in the blind child in attendance at the Centre and especially in her special competencies, e.g. language, and in how well she blended into the group and its activities. A high degree of parental involvement with this child was noted and her parents were given due credit for her remarkable level of functioning.

By beginning the Parent Partner training program with an observation of the Early Childhood Centre, it was possible to focus on normal child development and on the importance of early integration of handicapped children into mainstream settings. Integration is important for the handicapped child in order to take advantage of younger children's openness. But it is also important for the normally developing child, in order to prevent or minimize rejection of others and the rigidity and inhumaneness which is a consequence of such powers to reject. As well, the Parent Partners were able to see that children with special needs were children first and *then* children with special needs.

The visit to the Early Childhood Centre was followed by a discussion of the importance of parent-child interaction in the development of all children. It was noted that a particularly high degree of involvement between parents and their handicapped children is necessary, and that professionals must be cautioned against impairing that parent-child interaction. Methods of fostering parent child interaction were developed by discussing Bettye Caldwell's article, "What is the Optimal Learning Environment for the Young Child?" (Caldwell, 1972). Parent Partners were encouraged to bring information from their own experience to the discussion so as to help them to appreciate the validity of their own particular knowledge and its compatibility with the knowledge of the "expert" who authored the article.

The trainee Parent Partners were generally of the belief that children learn and develop in their own good time. This led to a discussion of the progress attained by, for example, Down's Syndrome children under the influence of structured sequential educational programs. As a result, the seeds of change were planted in some attitudes of Parent Partners.

This paved the way for Parent Partners coming to see the importance of providing realistic and clearly stated educational goals for children, monitoring children's progress and evaluating the results week by week.

The afternoon session provided Parent Partners with a brief introduction to the preschool project and a general presentation of early intervention programs. A history of the SEECC teacher preparation report (Hardy, 1971) and the Saskatoon Region (SEECC) Project were presented. In addition, the specific nature of the SEECC Preschool Project (Bloom, 1978) was described. The discussion went on to examine the relationship between the SEECC Preschool Project and the Portage Project (Shearer & Shearer, 1972).

A description of attitudes toward handicapped children was presented in historical perspective, and the ensuing discussion centered around those attitudes evaluated by Caldwell (1973). In historical sequence these attitudes have been characterized by:

— forget and hide

— screen and segregate

— identify and help.

Note was taken that although the attitude which leads to identification and intervention is now the most prevalent, both of the other attitudes are still a part of the milieu in which handicapped children and their parents find themselves. During discussion, however, emphasis was placed on the constructs of identification and intervention.

There followed a presentation of an historical perspective of identification strategies and early intervention programs. Items covered included Head Start Programs, theoretical bases for early interventions (Hunt, 1961; Bloom, 1964) and the following important conceptual issues associated with early childhood (Bronfenbrenner, 1974; Caldwell & Richmond, 1968; Caldwell, 1970, 1973):

a) Early intervention can be beneficial for handicapped and non-handicapped children;

b) Children who respond best from early intervention programs are those for whom no organic basis can be found for their handicap and for whom environments were found to be the most depriving;

c) The greater the extent of deprivation the greater the response of the children to the intervention program;

d) Intervention programs in which parents have been involved are more successful than programs in which parenters are relatively passive recipients; and

e) Even without economic, health, or nutritional deprivation, the environment of a handicapped child is depriving because the child cannot take advantage of it to the extent that he/she could, were there no handicapping condition present.

Several conclusions can be drawn from the research on early identification and early intervention. Preschool intervention programs can be a means of preventing or minimizing the effects of handicapping conditions, thus enabling children to function at a higher level than would have been possible without the intervention program (Kirk, 1958; Caldwell & Richmond, 1968; Caldwell, 1970). More structured programs with a definite language component produce greater gains than do those with less structure and informal or no specific language component (Karnes, 1973). Programs in which parents provide the educational intervention or where parental delivery in conjunction with group classroom experiences is the mode, appear to be superior in terms of amount and stability of gains made by children (Bronfenbrenner, 1974). Properly supervised paraprofessionals can be as effective teachers of young children as can professionals (Karnes, Tesha, & Hodgins, 1970; Levenstein, 1970; Schortinghuis & Frohman, 1974).

FOR FURTHER READING
(see Bibliography for complete references)

Boyd, R., & Boyd, E. "Parent Intervention in the Education of the Preschool Handicapped Child."

Mussen, P., Conger, I., & Kagan, J. *Child Development and Personality.*

Shearer, R., & Shearer, M. "The Portage Project: A Model for Early Childhood Education."

Day Two

In working with children whose development is delayed or deviates from the normal, it is important to have a basic grasp of normal child development augmented by knowledge about handicapped children. As well, a necessary ingredient of a successful intervention program is a carefully defined approach based on adequate theory. The second day, therefore, was concerned with theory and specifics of typical and atypical development. Concerns and issues that had been discussed during the first day helped to underline the relevance of the second day's components. Several specific concepts were developed in the course of the day's discussions:

a) *Growth* is a progressive development of a living organism or part of an organism from its earliest stage to maturity. We most commonly

think of growth of children in terms of an increase in size or an increase in the number of things that a child can do; i.e. a quantitative change.

b) *Development* signifies a change in pattern of functioning and complexity; i.e. a qualitative change. In children, these qualitative changes may be seen in all areas of development.

c) *Maturation* refers to progress from a simpler stage of development to a more complex stage. Early patterns of behaviour such as crawling, walking, reaching, grasping, are based on maturation.

d) *Learning* consists of behavioural changes which are primarily the result of experience and practice. Learning can be both quantitative (e.g. increasing one's vocabulary size) or qualitative (e.g. learning how to formulate complex sentences).

Adequate maturation is essential for adequate learning. In many situations it is difficult to distinguish changes which result from maturation alone, from changes which result from learning. For example, when children walk, they must have achieved enough physical maturation to bear their own weight. At the same time, walking requires exposure to the experience of walking and time to practise it. Maturation and learning and their interaction are involved in any child's developmental status at any given time. The interrelation of maturation and learning are associated with the notion of readiness, which refers to the point in a child's life where he or she might be expected to profit to an optimal degree from a specific teaching-learning situation. Discussion was then directed to the value and use of developmental schedules and specifically to the Portage Checklist (C.E.S.A. #12, 1972).

Development depends on two main factors: heredity and environment. An individual's developmental history is constrained by the interaction of these two influences. Various issues in the nature-nuture controversy and its historical background were therefore presented to the trainee Parent Partners. In general, greater emphasis was placed on the effects of environmental nurturance. Historically, it had been once believed that a child's potential was fixed prior to conception (in the sperm) at conception or at birth. Now, however, more importance is attributed to environment. Whereas each child has a certain *range* of genetic potential for development from the time of conception, the level of the development achieved within the range of potential is dependent on the quality of environmental influences. Such influences include mother's diet before birth, prenatal health of child and mother, mother's reaction to stress, degree of birth stress and exposure to stimulating experiences.

Against this background, the Parent Partners and the Project Co-ordinator watched the film *Principles of Development*. This film outlines the fundamentals of growth and development from infancy through childhood. In the discussion, content of the film was updated to be compatible with current knowledge of child development. As well, the

major point of the film, i.e. that development follows a continuous, orderly, progressive and predictable pattern, was stressed. By observing the children in the film, specific levels of accomplishment were delineated and individual differences were discussed. These included differences associated with:

gender,
intelligence,
race,
glandular functioning,
nutrition,
general health,
position in the family,
motivation and incentives,
heredity,
parental attitudes.

Discussion of these differences included the possible effects of heredity and environment in each case. The general areas of development which were covered included:

sensory-perceptual-motor,
cognitive,
affective,
conative.

These areas are inextricably interrelated. Impairment in development in any one area can impair the development in every other area. Enhancement of the development in any one area can enhance the development in every other area.

A brief historical perspective of cognitive development was presented, including the philosophical and pedagogical viewpoints of Locke and Rousseau, behavioural and psychoanalytical theory, and Piaget's views. Discussion was focussed on the question, "Is the child perceived as an active or passive learner?" As well, the controversy was discussed as to whether children develop by passing through identifiable stages or by a smooth and gradual growth. We took the position that the child is an active learner and in the course of his active learning he accomplishes competencies associated with sequentially ordered stages of development.

The group discussion which followed was related to the areas associated with the checklist and materials of the Portage Project (Shearer & Shearer, 1972). These areas include:

cognition,
motor,
language,
socialization,
self-help skills.

FOR FURTHER READING

**Bloom, B. *Teaching and Learning.*

*Erikson, E. *The Eight Stages of Man.*

*Hunt, J. M. *Intelligence and Experience.*

*Mussen, P., Conger, I., & Kagan, J. *Child Development and Personality.*

**Portage Project. *Description of the Areas of the Portage Project.*

*Stephens, B. *Training the Developmentally Young.*

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*See Bibliography for complete reference
**See Appendix A

Day Three

The major focus of the third day of the training program centred on cognitive development. Special attention was directed toward Piaget's theory that children develop their intelligence and thinking skills as a result of interacting meaningfully with their environment.

Prior to Piaget's work, interest in child development had been primarily directed toward establishing norms for motor growth and physical development. Though Piaget had been studying and writing about children and especially about the processes of child thought since the early twenties, he did not make an impact on North American audiences until the sixties. Piaget uses an observational approach to his study of children, more recently combining observation with questioning as a means of accumulating information on which to evolve his ideas. In the sixties, Hunt, and later Flavell, interpreted Piaget's theory about children's thinking skills. Since then educators and developmental psychologists have been much more receptive to what Piaget has to say.

According to Piaget, the newborn is not a completely helpless creature. At birth, children possess a biological propensity to organize their experience and to make adaptations related to this experience. In addition, newborns possess many inherited reflexes such as sucking and grasping. These reflexes are the elements out of which children develop motor actions with which they explore the environment. Through a cumulative series of actions-observations-feedback-adjustments, repeated over and over, children come to know the reality of the world about them in increasingly complex ways.

Children do not think like adults, but go through several distinctive preparatory stages of cognitive development. It is not possible to skip any stage since each stage is developed out of the experience of each previous stage. Cognitive development is attained in an orderly and sequential manner as a result of the child's experiencing and exploring cognitively interesting things in the environment. Each child progresses through each stage at his own rate. The rate of progression of any given child and the eventual level attained, is a function of the interaction between the child's own intellectual abilities and the quality and opportunity for explorations in a cognitively interesting environment.

The stages, and the ages when most children go through them, are listed below:

Sensorimotor (birth to 2 years),
Preoperational Thought (2 years to 7 years),
Concrete Operational Thought (7 years to 11 or 12 years),
Formal Operational Thought (11 or 12 years to adulthood).

The stages merge into each other. Each is built upon and derived from earlier stages; every new experience is incorporated into past experiences. That which any given child at any particular moment knows, is able to do, and believes, is always related to that which the child had experienced in his or her past.

The "operation" is central to Piaget's theory. An operation is a special kind of mental activity, one of whose major characteristics is that it is reversible. Piaget believes that children work through the various stages of intellectual development in preparation for acquiring, or in actually acquiring, different classes of operations.

The two most important mechanisms of thought which allow children to move from one stage to the next are assimilation and accommodation. During assimilation, children take in data from environmental experiences, relate them to previous experiences and act on them (either mentally or physically) in a manner appropriate to their present level of intellectual functioning. During accommodation, children noticing a discontinuity between some present datum and past experience will adjust their cognitive view of the situation so that their thinking about it is qualitatively changed.

During the sensorimotor period, children are developing their thinking skills by actively operating on the environment in sensory and motor ways. Innate reflexes and subsequent motor skills are practised and practised. In Preoperational Thought, language and meanings of objects are manipulated as well as actual objects. The use of symbolism in both play and communication prepare children for true intellectual operations. In Concrete Operational Thought children are capable of solving concrete problems, are capable of reversibility of thought, and are using true

intellectual operations. During Formal Operations, children develop their abilities to use all the modes of adult thought. They begin to think abstractly, to formulate hypotheses, to engage in deductive reasoning and to check their solutions.

The film *Cognitive Development* was shown twice on this day, once before the lecture and discussion of Piaget's theory, and once afterwards. In addition, related information such as the cognitive aspects of the Ypsilanti Home Teaching Program (Lambie et al., 1974) and the relationship which exists between language and thought were presented.

The afternoon was devoted to examining speech and language acquisition and development more closely. Speech is the mechanical production of the sounds, or auditory symbols, of a language. Speech includes the following factors:

articulation—the production of speech sounds as the result of the action of tongue, lips, teeth, palate, and jaw affecting the breath stream;
fluency—the flow of the production of speech; and
voice—intensity and quality of the vocal production.

Language, however, is a much broader concept than speech. Language is the whole system, the use of whole symbols is the means by which thoughts and feelings are communicated. Language is a three-fold system involving reception (taking in the stimuli), processing (understanding and interpreting), and expression (use and production).

The acquisition of speech and language begins with the infant's first cry, and progresses through various stages. These linguistic stages are sequential and hierarchical, parallelling cognitive stages through which the child is also moving. Linguistic stages include:

crying,
babbling,
echolalic babbling,
first word,
one word utterances,
two word utterances (functional sentences),
three word utterances (telegraphic sentences),
expanded grammatical forms,
established syntax, and
sophisticated speech and language.

The film *Language Development* was viewed and discussed. Then, the film *Jennifer is a Lady*, which depicts an autistic child and the speech and language teaching techniques used with her, was viewed and discussed.

FOR FURTHER READING

*Flavell, J. *The Developmental Psychology of Jean Piaget.*

*Furth, H. *Piaget for Teachers.*

*Hopper, R., & Naremore, R., *Children's Speech.*

**Hull, F., & Hull, M. *Summary of Early Normal Speech and Oral Language.*

*Hunt, J. McV. *Intelligence and Experience.*

**Mecham, M. *Developmental Schedules of Oral-Aural Language as an Aid to the Teacher of the MR.*

*Piaget, J. *The Psychology of Intelligence.*

*Stevens, B. *Training the Developmentally Young.*

**Trancham, C., & Pederson, J. *Developing Sentence Types.*

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*See Bibliography for complete reference
**See Appendix A

Day Four

The fourth day began with observation of the preschool classes of the School for the Deaf in Saskatoon. During the discussion of what had been observed, the supervising teacher stressed the importance of involving parents in the education of deaf children, especially in the children's early years. Observations and discussion focussed on a group language lesson, an individual speech lesson, and a group movement education class. In the final observation session multiple-handicapped children (including one deaf-blind child) were integrated into the class of deaf preschool children.

Discussion related the information learned during the three previous days to problems of child development which are associated with handicapping conditions. The Parent Partners and the co-ordinator viewed the film, *Can You Hear Me?* This film, which depicts a hearing-impaired child and her family, shows the identification of the child's hearing problem, the parents teaching the little girl, attendance at the John Tracy Clinic and the fitting of hearing aids. The film is especially appropriate for the training of Parent Partners (or parents and teachers) for it depicts accurately the role and nature of the task which parents of the hearing impaired must undertake, and shows clearly the difficulty which hearing impaired children experience in acquiring language.

As a result of the morning's observations and the film, further discussion was directed towards understanding the biological changes which occur in infancy. The newborn, however helpless, possess some remarkable abilities. In normal newborn children there is sensitivity to pain, touch, and change of position. These children can see, hear, touch, smell, and probably taste. Each displays a remarkable variety of reflexes, some of which are necessary for survival. Some reflexes will develop into true motor responses; some will face; some will remain constant throughout all of the child's life. Medical doctors use the quality and presence or absence of reflexes as symptoms of a child's developmental level and neurological health. An excellent presentation of human reflexes can be found in the second edition of the Vulpé Assessment Battery (1978).

At one time, it was believed that the infant's world was one of sensory confusion, but it is now believed that infants can attend to only one sensory stimulation at a time. It is possible that newborns cannot change their focus of attention as rapidly as older infants and children. The ability to change one's focus of attention is probably learned through experience, as is maintaining attention to focus on specific stimuli.

Newborns begin life with some abilities to make expressive responses and with sensory systems for the reception of sensory stimuli. From these two ingredients, children develop new behaviours and develop their thought processes. Although the quality of children's experiences in the first year of life will help to determine how active, vocal, and alert each child will be at age 2 or 3, psychological development is also dependent on growth of the central nervous system. The very young infant is not mature enough biologically to benefit as much from interaction with the environment as is the one year old or the three year old. To some degree, children depend on biological development in order to receive the full benefit of environmental experiences.

The Parent Partners and the co-ordinator discussed environmental experiences which can affect the developing child prior to birth. This discussion focussed especially on those prenatal environmental experiences which can harm the development of an otherwise normal infant. Such environmental "insults" include among other things maternal infection, intoxication, birth trauma, inappropriate exposure to harmful agents such as radiation or drugs (e.g. thalidomide). Given the possibility of adverse prenatal environmental influences, the lecture-discussion period was then directed to the maturational stages of normal infancy.

During the newborn period, infants must recover from the physiological trauma of birth. At such time, infants begin to become adjusted to the environment around them. There are dramatic day-to-day changes in alertness and activity of newborns. Sometime before the tenth week, infants appear to remember an event that occurred moments earlier. They become increasingly bored with repetitions of the same stimulus. The ability to store a memory of an event is primarily a function of maturation, as is the ability to react to a changed stimulus. Throughout infancy,

normally developing children show a sequence of reactions to a stimulus such as mothers' face, recognizing contours first then features. Reactions to facial stimuli range from a smile of recognition to a fear reaction (to a stranger's face, for example). These reactions develop gradually and with continuity from one reaction to the next. Many hidden psychological changes develop prior to each new expression of reaction.

Perceptual development (the development of significance associated with a stimulus) is dependent on the development of sensory capacities and the general determinants of attention to stimuli. With this in mind, a general discussion of the development of sensory capacities ensued, focussing on four processes which affect attention during the first year of life:

contrast,
movement,
discrepancy, and
richness of "hypotheses" activated in the child.

Each of these processes emerges at a different time, their emergence being controlled, in part, by maturation.

Newborns are equipped with sensory (input) apparatus and motor (output) apparatus which must be co-ordinated with a neural (processing) apparatus in order to gain meaning from environmental experience. Maturation of sensory, motor and processing abilities is necessary both as separate functions, and in co-ordination with each other. Without appropriate physiological maturation the infant cannot become fully functional. Maturation in tandem with information gleaned from actual environmental experience provides the means whereby the child is able to proceed gradually and systematically through the many developmental stages of sensory-perceptual-motor organization.

At the same time that neural organizations, thinking and language are developing, the child is also becoming a social being. Social development, like all other areas of development follows an orderly, sequential, hierarchical progression and is co-ordinated with all other areas of development.

Probably the two most critical social behaviours to be developed in infancy and early childhood are the behaviours of attachment and the appropriate management of dependency needs (Ainsworth, 1970). Attachment is the feeling of closeness to a parenting figure which can then be generalized (as the child develops) to other significant persons in the child's life. The satisfying of attachment needs forms the basis for the establishment of a sense of trust in later life encounters. The meeting of emotional dependency needs forms the basis of later independence and ego strength. Impairment in meeting attachment and dependency needs of infancy and early childhood can hinder later childhood development, and can undermine later functioning during adolescence and adulthood.

FOR FURTHER READING
(See Bibliography for complete references)

Mussen, P., Conger, J., & Kagan, J. *Child Development and Personality.*

Mussen, P., Conger, J., & Kagan, J. *Reading in Child Development and Personality.*

Rutter, M. *Maternal Deprivation Reassessed.*

Vulpé, S. *The Vulpé Assessment Battery.*

Day Five

The fifth day was divided into two separate periods. The morning was spent at the Alvin Buckwold Centre for Mental Retardation in Saskatoon. Parent Partners and the Co-ordinator listened to an overview description by the Director of the Centre, its purpose and programs. This presentation was followed by more detailed explanations and discussion of several projects currently sponsored by the Centre. These detailed explanations were presented by the directors of each program and included:

- biochemical investigations,
- parent groups,
- interventions with multiply handicapped children, and
- infant stimulation.

Of particular interest was the presentation concerning parent groups. Advantages and disadvantages of working with groups of parents, or working with parents singly, or in pairs, was discussed. Skills and sensitivities necessary for working with parents were delineated. In addition, information about working with multiply handicapped children and methodologies and techniques in infant stimulation was presented. A videotape of a home-teaching period with a multiply handicapped child was observed and discussed. The morning concluded with a general question and answer period about programs and specific intervention techniques.

The afternoon session continued the discussion from the previous day concerning perceptual motor development and the significance of social factors in healthy child development.

Attention was first drawn to the kinds of responses children can make at birth and later. The responses present at birth are essentially reflexes and are not learned. These reflex responses are adaptive and are necessary for survival (e.g. sucking and crying) or they can reflect the state of the newborn's nervous system (e.g. the moro reflex and the grasp reflex). In addition to reflex responses, the newborn has generalized responses such as squirming or twisting movements, arching the head back,

body jerking, and trembling.

There are two main types of responses which are not present at birth but are acquired later. Maturational responses develop with no special teaching but as a result of physiological maturation. The onset of these responses, however, can be enhanced as a result of experience. Learned responses, on the other hand, must be acquired in a specific way or they will not appear. Creeping, standing and walking are maturational responses, whereas opening a door, sitting on the toilet, writing and singing are learned responses.

It is often difficult to differentiate between a maturational response and a learned response, for environmental opportunity and enrichment enter into the acquisition of both maturational and learned responses. Some children who are never allowed or expected to walk, never learn to walk; some children learn to read without ever having had formal instruction in reading. The point is, however, that enriching environmental stimulation can enhance development whether maturational or learned, provided the child is physiologically and psychologically ready to profit from the stimulation. The timing of enriching environmental stimulation is critical to optimal progress in development for any given child.

In addition to emphasizing parents' role as the primary educators of their preschool children, persons working with families must be on the alert for indicators of readiness if early intervention programs are to be effective. They must also help parents to develop their own sensitivities in this area.

Children progress through increasingly complex stages of development in every area, and the level of functioning in different areas is interrelated. However, there are both intra-individual and inter-individual differences in rates of development. It is therefore important for parents and anyone else working with children to be thoroughly acquainted with the children with whom they are interacting. Among other things, goood knowledge of a child can prevent confrontation with environmental experiences which are too complex for the child to handle.

Children vary, too, in their levels of motor activity, their passivity and the kinds of things to which they prefer to attend. Indications of such differences may be apparent as early as the first weeks of a child's life. There is some suggestion that early differences may persist into late childhood or even into adulthood. Whether or not this is true, it is important for parents and other persons working with young children to recognize individual differences and individual preferences when planning educational developmental activities. This is particularly true of young handicapped children who by the very nature of their condition, are having difficulty in co-ordinating perceptual-motor, intellectual and social factors associated with their development.

Efficient perceptual-motor development leads to improved motor exploration. In turn, improved motor co-ordination stimulates cognitive

growth and increases the probability of social encounters. Cognitive development and social needs enhance the acquisition and development of language, as a result of which there is further growth in perceptual-motor proficiency and cognitive capacities.

Child development results from a complex interaction of many physiological, psychological and social factors. An adverse influence at any point in the cycle of development can have far-reaching negative implications. On the other hand, a positive influence anywhere in the cycle of development can have far-reaching implications for good. The purpose of a good educational intervention in the lives of handicapped children is to counteract any negative influences that might have been associated with the handicapping condition by a decidedly positive influence. This is best achieved by working as a partner with the parents of a handicapped child and by stimulating and enriching, at the proper time, experiences which are in critical developmental areas for the child. In the young child, these areas include:

sensory-perceptual-motor skills,
cognitive (thinking) skills,
language skills,
social skills, and
self-help skills.

FOR FURTHER READING
(See Bibliography for complete references)

Johnson, V., & Werner, R. *A Step-by-Step Learning Guide for Retarded Infants and Children.*

Jorden, J., & Daily, R. *Not All Little Wagons are Red.*

Murphy, L. *Children Under Three: Finding Ways to Stimulate Development.*

Mussen, P., Conger, J., & Kagan, J. *Child Development and Personality.*

Day Six

The morning presentation for the sixth day in the Parent Partner training program examined in greater depth than during the previous discussion on Day #4 the effects of prenatal influences on the developing fetus. Though most of the discussion was directed toward prenatal environmental influences, it began with an examination of hereditary factors.

Heredity plays an important part in helping to fashion children's many traits and characteristics. But most traits and characteristics are not determined entirely by genetic make-up. Even though some specific characteristics such as Down's Syndrome are a result of genetic make-up, many traits can be modified remarkably by influences from the environment. The growth and development of any child's inherent potential can be realized, enriched, thwarted or limited according to the quality of the physical, social, and psychological environment with which the child interacts. Prenatal experience represents one aspect of this environment.

Many prenatal environmental factors can serve to enhance or limit the actual prenatal (and subsequent) development of the child. Such factors include:

age of mother,
diet of mother,
presence of damaging agents (e.g. drugs, alcohol, irradiation, bilirubin),
maternal infection (e.g. rubella, toxoplasmosis, syphilis),
maternal disease (e.g. diabetes, Rh incompatibility, heart disease), and
maternal emotional state (e.g. anxiety, fear).

Birth trauma and anoxia, too, can impair normal child development, and prematernity can put a child at risk for many developmental problems.

Problems associated with pregnancy and delivery are three to four times more frequent for persons of low socio-economic status as they are for middle-class persons. Nutrition is more probably inadequate for both mothers and children of low socio-economic status families so that for medical and physiological factors alone, the children of the poor are much more at risk for exposure to factors associated with developmental impairment than are the children of the middle class. Furthermore, the children of the poor are less likely to be exposed to those environmental experiences which stimulate child development, especially those experiences which develop behaviours and skills which schools, in particular, are likely to expect.

With these facts in mind, the afternoon session on the sixth day examined learning, and specifically those learning situations which provide considerable structure and which are especially appropriate for the behaviours and tasks which the very young child must accomplish.

There are many learning theories. Piaget's explanation or theory of how children come to know or learn about the real world has already been considered. Another learning theory, which some people call simply "Learning Theory" is not so concerned as Piaget about the actual processes through which a child goes, but is more concerned with shaping children's observable behaviours. This particular learning theory stresses the power of influences in the environment and minimizes the role of biological maturation. People who use this theory to explain learning are called

"behaviorists."

Behaviorists direct their attention to specific behaviours which they want to elicit or extinguish in a child's repertoire of behaviours or actions. For behaviorists, learning is a change in behaviour as a result of experience. The experience which is provided consists of reinforcement which leads to an increase in the desired behaviour. For example, verbal praise can increase the frequency of "door-closing behaviour." In addition, learning can be the acquiring of new responses or it can take the form of decreasing undesirable behaviours.

Under a behavioural explanation of learning, a behaviour increases as a result of the child receiving some kind of reinforcement. Reinforcement is anything that increases the frequency of a response. Reinforcement is given to the child immediately upon performance of the behaviour, or an acceptable close approximation of the behaviour (e.g. saying "da-da" for "Daddy").

A positive reinforcer is something "good" which increases the frequency of a behaviour. For children this might be a pat on the back, a smile and "good girl" or "good boy," a star pasted on a chart to record progress or, if necessary, a "treat" in the form of candy or sugar cereal. A negative reinforcer is something "bad," the absence of which increases the frequency of a behaviour. Negative reinforcers are not often used with human beings; one modern-day example would be the buzzer which sounds until the seat-belt is fastened when riding in a car. Punishment is something "bad" which decreases the frequency of a behaviour. Except in rare circumstances, physical punishment should not be used with young children, as the use of such punishment may be associated with intensification of the original problem in a variety of complex ways. Instead, the ignoring of behaviour which one wants to decrease and positive reinforcement for desired "replacement behaviours" is much more effective. An example of this would be to ignore wet pants; give no reinforcement whatsoever, but give much positive reinforcement for using the toilet.

According to behavioural theory, we all learn by making an association between the behaviours we perform and the kind of reinforcement we receive. Sometimes parents and other people working with children find themselves inadvertently giving reinforcement (which is viewed "positively" by a child) for some specific behaviour which they want to eliminate. For example, if a child gets attention, even if it is angry attention, only when she or he jumps up and down on the over-stuffed chair, the child will continue to jump up and down on the over-stuffed chair. Angry attention is better from the child's point of view than no attention at all.

More important to the present project, however, is the use of behavioural techniques for the expansion of children's repertoires of behaviour or for the directing of attention to the completion of a task. Though we do not believe that behavioural theory is an adequate theory for the explaining of *all* learning, it is an appropriate technique to help

young children and especially young handicapped children to learn specific skills and competencies which will help children to be more independent and more free to explore the world in sensory-motor ways. Such exploration is the basis on which are developed problem-solving skills of intellect and social skills which enhance both language and cognition.

Following the lecture and discussion on learning theory, the Parent Partners were assisted in making the direct application of this theory into the specifics of "behaviour modification." The development of self-help skills through behaviour modification techniques was used as the subject for group discussion. Discussion was followed by a viewing of the film *Genesis* which directs itself specifically to the teaching of dressing, feeding and toileting skills by using behaviour modification techniques.

FOR FURTHER READING

**Bloom, B. "Teaching and Learning."

**Bloom, B. "Mother's Mini-Text on One Kind of Learning."

*Johnson, V., & Werner, R. *A Step-by-Step Learning Guide for Retarded Infants and Children.*

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*See Bibliography for complete reference
**See Appendix A

Days Seven, Eight and Nine

The final three days of the Parent Partner training program took on a "workshop" format. The seventh day was concerned with assessment. The eighth and ninth days consisted of "hands-on" experiences which were as close as possible to those which the Parent Partners might be expected to meet in their contact with handicapped preschool children and their parents while teaching in the home.

It is important for everyone to understand that assessment is a broad term which can include many types of information-getting techniques. The purpose of assessment is to find out what a person can or cannot do. In the present case, children would be assessed on the basis of a developmental profile and a checklist of specific behaviours. In addition, observation, both initial and observation made in the course of teaching, would be used. From these forms of testing and observation, specific decisions about educational programming would be made. Finally, samples of behaviour from the testing situation and from observation would be continued on a systematic and on-going basis so that subsequent informed educational decisions about educational programs could be made.

The Alpern-Boll Developmental Profile provides information about a child in five developmental areas of educational interest (physical, self-help, social, academic, and communication). This test takes the form of a questionnaire which enables a child's parent or some other person who knows the child well to provide necessary information. Children receive a score in each of the five areas. These scores can be translated into an "age" for each area, resulting in a profile which depicts the child's developmental age in each area. Relative strengths and weaknesses can be observed and each developmental age can be compared to the child's chronological age.

The Portage Checklist is used in conjunction with a Card File, a sequenced curriculum covering five areas; Cognition, Self-help, Motor, Language, and Socialization. The Checklist and Card File are therefore quite compatible with the Alpern-Boll Developmental Profile.

The Checklist and Card File provide a further means of assessing the child's present behaviour. In addition to present behaviour, they can help to delineate emerging behaviours, and provide useful ideas and techniques for teaching specific behaviours, skills, and concepts. The Checklist and Card File were not designed to be used rigidly or mechanically. Parent Partners were encouraged to use the Checklist and Card File as a resource and to bring to all of their teaching and decision-making their own knowledge about a given child; "feedback" information from every teaching situation; and the specific individual needs of the child.

In any given intervention program each child should have his or her own Checklist. If the Checklist is used properly, an indication of entry behaviours will be immediately available as well as a listing of behaviours which the child has learned, dates on which successes occurred, and the specific curriculum which was taught. Through a system of number coding and color coding, specific tasks and teaching techniques can be retrieved from the Card File to achieve specific curriculum goals. These goals can be defined by use of the Checklist. Each card includes (Weber, 1975):

1) the behaviour as stated on the Checklist;

2) a behavioural description of the task or skill to be taught, including evaluative criteria;

3) suggested materials to teach the task or skill; and

4) a list of activities or ideas on how to teach the task or skill. (Many cards are cross-referenced to other cards of related interest.)

During the seventh day, the concept of a developmental profile and specifically the Alpern-Boll Developmental Profile were discussed. Parent Partners practised scoring the test, using a hypothetical child and with the Co-ordinator answering the questions of the questionnaire. Additional

practice in scoring was obtained by having the Co-ordinator interview a mother who responded with reference to her preschool daughter.

Using the monograph by Weber et al. (1975) as a primary resource, a group discussion followed on formal and informal assessment and testing, and on child observation. The discussion was especially lively as, after two scoring sessions of the Alpern-Boll, assessment was not something in the abstract to the Parent Partners. Stress was placed on identifying relative strengths and weaknesses for the purpose of making decisions about individual educational programs.

Each Parent Partner had been asked to find a preschool child to whom she could administer the Profile. Each completed this assignment on the evening of the seventh day.

The eighth day began with a discussion of the previous days' activities and especially a discussion of the evening's assignment. Problems, successes, individual experiences and questions were all discussed by the group. Following this, attention was directed to several possible ways that educational intervention could be provided to preschool handicapped children. Special attention was directed to the advantages (and disadvantages) of home-based programs. Particular advantages that were noted included:

1) Children do not have to be transported.

2) Learning occurs in the child's natural environment which
   a) minimizes the child's anxiety.
   b) increases the probability of generalization into everyday behaviours.

3) There is constant and direct access to behaviours that occur naturally.

4) There is more opportunity for full family participation in the teaching-learning process.

5) Individualization is more likely to occur since the teaching is one-to-one.

6) Children do not need to be excluded because they cannot get to a center for instruction.

A major disadvantage of home-based programs in sparsely populated areas is the amount of time and money needed for travel expenses.

The final two days of the training program were also used to examine such topics as the use of paraprofessionals in teaching and the implications of working with parents. However, the major portion of time was used for practical experience and role playing of the situations in which the Parent Partners would have to function.

It had been planned that the Preschool Project would accept referrals from parents or from persons professionally involved with a child. We would make our initial visit, provided the parent showed interest in participating in the project after an introductory telephone call explaining the project in general terms. This visit would always include the Co-ordinator and the Parent Partner who would be assigned to the family. During the initial visit every effort would be made to put the parents at ease and the project would be explained in greater detail. If the parents were interested in enrolling their child, we would carefully explain the Alpern-Boll Developmental Profile and show how it could be used to indicate the child's strengths and weaknesses and its use as a measure of their child's progress over time. The use of the Checklist, to pinpoint specific skills and tasks, and the Card File, to help plan educational activities, would also be explained. Finally, on the initial visit, parents would be shown how to teach one or two educational tasks, as it is important to capitalize on the parents' initial interest and motivation. At the same time, it is also important that both parent(s) and child experience success in teaching and learning from the outset. If it seemed that the charting associated with the precision teaching to be employed would be difficult for a particular parent, it was not taught until several sessions later.

During the training session Parent Partners were reminded of the importance of being sensitive to the needs of parents of handicapped children. Emphasis was placed on the importance of listening to parents, putting them at their ease, involving parents in educational planning for their child, reinforcing their efforts at teaching their child and providing support as an additional available adult to help in decision-making and planning. Most of all, the discussions of the eighth and ninth days focussed on how to help parents to be successful. Weber et al. (1975) have listed the following suggestions:

1) Set goals that can be accomplished within one week.

2) Model for parents. Don't just tell them what to do, *show* them.

3) After modelling for the parents, let them take over and work on the same activity with the child while you observe.

4) Reinforce the parents; let them know they are doing it correctly.

5) Remember that there are individual differences in parents. It is as important to individualize for the parents, based on their present behaviour, as it is to individualize for the child.

6) Involve the parents in planning appropriate goals for the child.

Above all, it was made abundantly clear to the Parent Partners that working with parents, like working with children, must be regarded as an individualized and sensitive process.

Practical "hands-on" experience was provided during the eighth and ninth days in using the Checklist and the Card File, in developing educational objectives and in planning activities and developing educational materials. Considerable time was spent dealing with how to write educational objectives and seeing that each objective was written in behavioural terms; that it contained a statement of the conditions under which the behaviour would be done; and that it included the criteria against which to evaluate successful performance. The process of task analysis was examined and each Parent Partner studied several specific educational tasks in order to analyze these in terms of prerequisite skills and to arrange these skills in sequential order.

Practice was provided for teaching actual tasks so that Parent Partners could become conscious of how to exploit physical, visual and auditory teaching cues and to appreciate the effects of reinforcement. Emphasis was placed on positive reinforcement and the planning for success, both for children in their learning and parents in their teaching. Parent Partners practised developing activity charts and the teaching of charting, reporting, and record keeping to parents (see Appendix A).

A final review of some prerequisites for learning, such as attending, imitation and compliance, and a review of our home contact procedures from initial visit to reporting, completed the nine day training session. Continuous training was provided each Friday morning throughout the two year project. These weekly sessions usually focussed on specific learning problems which had been encountered during the preceding week. In addition, these Friday morning sessions were used periodically to deal with larger topics such as extended work in language training, behaviour modification and working with parents.

FOR FURTHER READING

*Alpern, G., & Boll, T. *Developmental Profile.*

**Braun, E. References: Parent-Partner Training Program (see pp. 71-73).

*Weber, S. et al. *The Portage Guide to Home Teaching.*

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*See Bibliography for complete reference
**See Appendix A

The foregoing section has described the content of the pre-service training program which was implemented at the beginning of the Saskatoon Preschool Project. During the two years that the Project was in operation, developments took place and were observed, and lessons were learned which could have implications for the planning of future training programs. Rather than tamper with the description of the original pre-service training program as it was (and which proved highly satisfactory) the present chapter provides a summary of observations which might be taken into account, and which could result in more insightful and effective future training programs.

Parent Partners: Administration and Duties

1) Parent Partners were paid according to caseload.

2) Mileage expenses were adjusted to minimize any salary differentials which might have arisen from unusual variation in distance travelled per caseload.

3) Parent Partners were essentially paraprofessionals hired on account of their "parenting skills" and desire to learn about, and work with, handicapped children and their families.

4) A specific effort was made to hire community-based workers as Parent Partners for each school unit being served.

5) Parent Partners were responsible for screening, assessment, curriculum development and implementation, and for becoming resource persons with an ever expanding knowledge of all kinds of handicapping conditions and of appropriate educational interventions.

6) Parent Partners and Co-ordinator worked closely with personnel from public health, educational and social services and from many other agencies and resources.

7) Parent Partners and Co-ordinator encouraged the development of a parent group which was beginning to define its own parent education program as the project progressed.

Parent Partners and Parents

In the course of implementing the two year project it became evident that Parent Partners must:

1) be aware of all community services and agencies available to handicapped children;

2) act as a liaison between a) home and school, and b) home and other agencies;

3) act as an educational guide and counsellor;

4) be able to deal with the non-acceptance of handicapped children in some homes, schools and communities;

5) be dependable and able to work independently;

6) be able to accept all different kinds of people and homes without being judgemental; and

7) be flexible and sensitive to the needs of child and family.

Parent Partner Growth

During the course of the project it was interesting to watch the change in the Parent Partners' attitudes about themselves and the change in their abilities to teach children and parents. At the point of interview for hiring only two women of twelve presented themselves with confidence and only one of these could provide any kind of written information of herself and letters of recommendation. At the end of the project all Parent Partners were self-assured and confident in their abilities to work with children and their parents. They were much more relaxed and less withdrawn in public meetings and in their meetings with professionals. In addition, there was a marked change in Parent Partners' knowledge of child development and of handicapping conditions and in their belief in the value of educational interventions for the benefit of children's development.

Parental growth. Parents, too, changed noticeably during the project. They developed more confidence in handling their own problems. They were more able to teach their children, to voice their concerns and to speak out about the needs of handicapped children. On the whole, rural parents were much more capable of initiating educational activities and of developing strategies for problems arising from lack of adequate support services. Some urban parents seemed to have an attitude of "Why don't *you* do something about this?" whereas most rural parents seemed to have an attitude of "What's the next step that *I* must take to help my child?" It must be noted that sample sizes were small and the urban sample was especially small. An informal questionnaire was the only measure of parental attitudes. However, observations from both questionnaire and informal experience suggest an interesting question for further research. Do urban middle-class parents (possibly as a result of closer proximity to more services and a greater knowledge of their children's rights) tend to have a more detached attitude toward their handicapped children's needs than do rural working-class and middle-class parents?

Other Assets of the Project

The SEECC Preschool Project proved to be advantageous for the needs of handicapped children and their families. Children and their families could be served in a matter of days, depending on the efficiency of referral personnel. For example, one Down's Syndrome child was diagnosed shortly after birth, referred at the age of six weeks and enrolled shortly thereafter. Children with non-specific problems (i.e. "at risk" for developmental delay, could receive attention before the potential risk became true developmental delay. Most of the "at risk" children were referred by public health nurses or were included in the program as a result of being a younger sibling of a child suffering from true developmental delay.

The project worked closely with school and social services personnel. Some five and six year olds were in the program in conjunction with kindergarten sessions. One of the Parent Partners who was working with a family whose oldest child had been designated as delayed in development and whose two younger children were considered "at risk" was later hired by the Department of Social Services as a "homemaker." In her role as "homemaker" she taught the parents marketing, budgeting, meal-planning and other homemaking skills. In her weekly role as Parent Partner she helped the mother provide experiences for her children that would aid their development.

During the first year of the Project (1976-1977) costs approximated $1,000 per child per year (10 months). These costs increased over time as a result of inflation, particularly in the cost of transport. Projected costs for a similar project in the same area for the academic year 1978-1979 were about $1,300 per child per year. Even so, the service is relatively cheap and would continue to be relatively cheap in the future. Moreover, with further expansion of the labours of paraprofessionals (McLeod, 1979; Bloom, 1979) costs could be further reduced.

Finally, one of our assets has proven to be somewhat of a problem. Other professionals have discovered that our Parent Partners have "good rapport" with "difficult" families. As a result, they have asked Parent Partners to attend meetings or staffing sessions concerning these families. Flattering as this is, however, it causes problems of time and budget. More important, it raises the question, what are Parent Partners doing that professionals have not been able to do with some specific families?

Limitations and Suggestions

The lack of measures of change, both in attitude and in knowledge of child development and educational interventions on the part of both parents and Parent Partners, was an important limitation of the project. There were other limitations.

Though there were many medical referrals from both public health nurses and medical doctors, some children were referred and screened only through educational facilities. Medical examination was suggested to parents if this seemed advisable, but parents were free to seek medical examination or not, as they saw fit. In early intervention projects, it would be better for education and medicine to be closely involved in every case. Each discipline has an important contribution to make in identifying handicapped children and in minimizing the effects of any handicapping conditions.

The training program would be improved by covering the same content in twelve days instead of nine. The extra time should be used for more discussion, more practice in direct contact with children and parents, and more opportunity for reflection about the content itself. Spacing the training program over four weeks with class sessions only three days of every week would reduce the feeling of "rushing and cramming" that Parent Partners reported. It would also provide time for necessary reflection.

In-service training should be intensified. A full day, rather than a half day per week would enable staff meetings to concentrate on weekly business and specific child-related problems during the morning, while workshops devoted to specific topics could be carried out in the afternoon. Areas which need more intensive training exposure include:

speech and language development,
psychomotor development,
the problems of multiply handicapped children,
etiologies of mental regardation,
developmental problems of Down's Syndrome children,
management of behaviour problems, and
problems of profoundly and severely retarded children and their families.

Though the Alpern-Boll Developmental Profile is a useful instrument, it is not sufficiently precise for infants and multiply handicapped children. In the present project, the Alpern-Boll was augmented by various developmental guidelines for planning programs for the children.

It was the consensus of Parent Partners that reports on the children should be semi-annual or quarterly rather than annual. In addition, even closer contact should have been maintained with other child-service agencies so that the Parent Partners could have benefitted more from their experience and expertise. The Co-ordinator suggested that an intermediate stage was needed in the personnel framework between the Co-ordinator and the workers who are interfacing with parents. These intermediaries would be professional home teachers with six or eight paraprofessionals (who might be parents of handicapped children themselves) under her or his professional guidance, and would be responsible for disseminating information to Parent Partners and for handling specific

child-related problems. The Co-ordinator would be responsible for co-ordinating the work of the professional home teachers, interfacing with other agencies, handling referrals and directing reporting activities. It should be noted, however, that in any project whose purpose was exclusively service-oriented rather than research-oriented, these kinds of responsibilities might be more appropriately assigned to the Director. The Co-ordinator would not necessarily thereby function simply as a professional home teacher. Rather, duties could be re-distributed and more adequate servicing of the needs of children and their families (e.g. more frequent reporting, greater support for parent groups) could be accomplished.

Conclusion

The Saskatoon Region Preschool Project has been an interesting and enlightening experience. We have seen children, paraprofessionals and parents make considerable gains in their development and personal growth, and we like to believe that experience with the program has led to personal and professional growth in the research and organizational personnel. It has been relatively inexpensive. It has been fun. We heartily recommend it to any community which is interested in meeting the needs of handicapped children and their families.

FOR FURTHER READING

*Bloom, B. J. *Final Report of the SEECC Preschool Project: Early Intervention through Parent Professional Partnership.*

Glazer, C., & Braun, E. In-Service Bibliography (1976-78). (See p. 74)

In-Service Activities (see Appendix B).

Film List (see Appendix C).

Materials and Activities (see Appendix D).

*See Bibliography for complete reference.

APPENDIX A

Contents

	Page
Teaching and Learning	36
Extracts from *The Portage Checklist*, C.E.S.A. #12 Wisconsin	41
Developmental Language Schedules. M. Mecham	46
Developmental Sentence Types. C. Trancham & J. Pederson	56
Developmental Stages of Normal Speech and Oral Language. F. Hull & M. Hull	58
Mother's Mini-text on One Kind of Learning Theory	60
Example of Weekly Progress Report, Charting	67
References:	
Parent Partner Training Program	71
In-Service Bibliography (1976-1978)	73

TEACHING AND LEARNING

I. Definitions

A. Growth—an increase in number or size (i.e. this is a concept of *quantitative* change).

B. Development—an increase in functioning and complexity (i.e. this is a concept of *qualitative* change).

C. Learning—a change in behavior as a result of experience. (This concept can, and should, be viewed in both quantitative and qualitative terms.)

1. Quantitative—increase in number or amount of behavior.

a. The number of unassisted steps that a toddler takes each day as he *learns* to walk.

b. The number of new words used by a child as he learns vocabulary.

2. Qualitative—increase in complexity of behavior.

a. The difference between learning to play hockey and simply learning to skate.

b. The difference between "holophrases" in the young child "Allgone milk"; and complex sentences "I have drunk all of my milk."

D. Teaching

1. Traditional—Teaching is the art or profession of one who imparts knowledge.

a. Based on an understanding of human development as simply a process of "unfoldment."

b. Influenced by a misunderstanding that intelligence is

(i) innate (i.e. determined at conception),
(ii) fixed (i.e. not able to be changed),
(iii) a predeterminer of ability to learn.

2. "New definition"—Teaching is the art or profession of one who helps others to be aware, through experience.

a. Based on "new" research which has *challenged* the concepts of

(i) "unfoldment",
(ii) innate and fixed intelligence,
(iii) predetermined ability to learn.

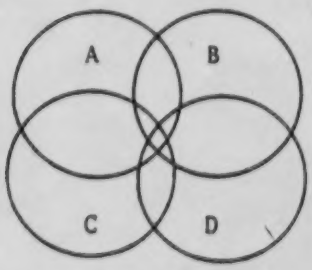
b. Influenced by

(i) genetic environment interaction,
(ii) animal research concerning what goes on in the organism between S and R,
(iii) Piaget's research,
(iv) studies in child deprivation,
(v) research in psycholinguistics,
(vi) research in social-psychology.

E. As a result, we are *beginning* to have an understanding of the *teaching-learning process.*

II. The Teaching-Learning Process

A. Is intricately tied up with child development.



A = cognitive
B = affective
C = sensory-perceptual-motor
D = conative (valuing, strivings)

1. Each area influences each other area.

2. Impairment in the development of any one area *can* influence the development of any other area (but it does not necessarily *have* to).

3. Enhancement in the development of any one area can influence the development of any other area.

B. For the moment, therefore, let us look at some theories of child development.

	Cognitive (Piaget)	Active (Freud)	Sensory-Perceptual-Motor (Cratty)	"Learning" (Razran)
Level A	0-2 years Sensori-Motor Period 1. Practicing reflexes 2. Adapting reflexes 3. Reaction effect of actions 4. Co-ordination of actions 5. Interest in new experiences 6. Invention of "new means"	0-2 years Id - newborn is all id (i.e. energy derived from sexual and aggressive instincts). The id immediately discharges motorically any sensory excitations that reach it. Fulfill needs of "pleasure principle". As the person copes with the needs of the id and reality, the ego emerges.	0-5 years 1. Reflexes emerge into true motor behaviours. 2. Some reflexes "drop out". 3. S-P-M skills become increasingly more precise.	0-6 months 1. Laws of classical condition—contiguity is necessary but not a sufficient condition for acquiring new responses. 2. We are passive. The environment "stamps in" associations (conditioning).
Level B	2-11 years Preparation for and Organization of Concrete Operations 1. (Pre-Op) beginning of SYMBOLISM 2. (Con-Op) well organized cognitive system. a. conservation b. substructures c. organization d. integration	2-7 years The ego is governed by the reality principle. Therefore, there is a lot of reality testing at this time. Perceptual system develops finer powers of discrimination so that external world can be perceived accurately. Memory improves. As the child assimilates standards (usually from parents) of "good" and "bad", the superego is developed.	5 years 1. Neuromuscular system is nearing completion. 2. Perceptual integrations are almost complete. 3. Needs time now for S-P-M experience.	6-30 months 1. We are more active. 2. We operate upon our environment, therefore operant conditioning becomes major mode of learning. 3. Learning is based on *effectiveness* of our operant responses (rewards and punishments).
Level C	11 years + onward Formal Operations 1. Thought can start from the hypothetical and progress to the real. 2. Consider all possible combinations. 3. Internal manipulation of relationships	7 years + onward Superego (7). The superego is made up of the ego-ideal ("good") and conscience ("bad"). It is the internalization of values and is governed by the morality principle.	Puberty S-P-M development is complete	30 months to adult 1. Learner's response is in the form of symbolic processes. 2. Importance of attention sets and attitudes, and cognitive styles increases in determining responses. (Gestalting)

C. Practical application of knowledge of child development to the teaching/learning process.

1. This process is first and foremost a relationship between the child's inherent abilities and the environment (other people, things, experiences, etc.).

2. Since learning is intricately tied up to the development of the child we must look for the important variables of that development. What are they?

a. Cognitive

(i) Intelligence is essentially a specific form of biological adaptation.

(ii) A child's intelligence is developed.

(iii) There is a certain range of possible intellectual potential which each child receives as a result of his genetic inheritance.

(iv) Whether or not a child is able to develop to his fullest genetic potential is dependent on the quantity and quality of his environmental experiences.

b. Affective

(i) Affective development is essentially an "adjustment" or psychological adaptation to one's surroundings.

(ii) Like intelligence, affective development is the result of the interaction of the genetic potential of a child and his environment.

c. Sensory-Perceptual-Motor

(i) Sensory-perceptual-motor development is the development of an understanding of oneself in relation to space.

(ii) Like intelligence and affective development, it is the result of the interaction of the genetic potential of the child and his environment.

d. Conative

(i) Conative development is the development of values, motivations, strivings, and moral judgement.

(ii) It is developed as a result of the child's interaction with others, especially family and cultural group.

3. The "kind" of learning a child will use will depend on

   a. General level of development of the child.

   b. Level of development of the child for that specific task.

   c. The complexity of the task.

4. The responsibility of the "teacher" in the teaching/learning situation.

   a. Establish a relationship.

      (i) cognitive,
      (ii) affective,
      (iii) sensory-perceptual-motor,
      (iv) conative.

   b. Determine the child's level in terms of learning theory.

      (i) general level,
      (ii) specific level for the task.

D. A word about operant conditioning and behaviour modification.

1. We all experience it at all ages and at all levels of development.

2. It can be a useful tool.

3. It *works*, and must be used intelligently.

4. It does not explain all learning.

EXTRACTS FROM THE PORTAGE CHECKLIST

C.E.S.A. #12 Wisconsin

Cognition

Cognition or thinking is the ability to remember, see or hear likenesses and differences, and to determine relationships between ideas and things.

Cognition or thinking takes place inside the child, therefore, we can only measure it in terms of what the child says or does.

Remembering or memory is the saving and storing of information for recall or reproduction. The child will remember and name objects, pictures, shapes and symbols such as traffic lights, before he can identify letters and words.

Early in the child's life his responses are remembered imitations of others. Later, he will give new or recognized "best" answers from known and remembered information. For example, when asked, "What do you do in the morning?", he might say, "Get up"; or when asked, "What are two and two?", he might reply, "four."

As he develops he will be able to give a variety of new and original responses. When asked, "What do you do in the morning?", he might say, "Put my dog outside"; or when asked, "What are two and two?", he might respond, "The same as 0 and 4, or 3 and 1."

Noting likenesses and differences and seeing relationships between ideas involves the ability to separate one unit from a whole group (such as sorting silverware into knives, forks, and spoons), and the ability to bring together parts into a whole (such as putting pictures of things used in a kitchen together, or all farm animals together).

At more advanced levels, the child is able to determine goodness or suitability of objects, ideas, and actions in terms of a standard, such as neat/messy, good/bad. After making this evaluation, the child will be able to act upon his choice.

The curriculum in the cognitive area includes activities from beginning awareness of himself and the world around him; to awareness of number concepts, repeating stories, and making comparisons.

In any area of development, necessary beginning skills may be found in other areas of development. (To sort shapes, the child will need the motor skill to hold and move the shapes.) Activities are cross-referenced and some activities will necessarily appear in more than one area in the checklist.

Self-Help

The self-help category is concerned with those behaviors of the child which enable him to care for himself in the areas of feeding, dressing, bathing and toileting. These behaviors might have been included in the category with social skills, because self-help activities are related to living with other people and with the social customs of the family. However, these behaviors are of such importance to the child and his family and its expectations for the child, that they were placed in a separate category. The child's ability to care for himself, freeing the mother or members of the family from this responsibility is very important. It is also important to the child as it relates to his ability to see himself as a unique, independent member of the family and the community.

Behaviors described in this area, as in the other developmental areas, follow a sequential developmental pattern. The sequences have been developed in terms of what has been found to be the most appropriate steps for developing a particular skill and also in terms of the child's ability to handle a particular task because of his motor skills and general level of understanding. For example, the child should be able to use his thumb and fingers to place pegs in a rather large pegboard before being required to button buttons on a coat.

The development of self-help behaviors aid the child in his efforts to become a happy, independent member of a family and community; it helps the family, and family members, live more easily with the child, and allows the family to be more independent of the child.

Motor

Motor behaviors of the young child are crucial for two reasons. (1) They provide a means of expression of skills in the other developmental areas and, (2) they are thought by many to be the foundation of cognitive and language development.

The motor area is primarily concerned with the coordinated movements of large and small muscles of the body. Movement of the large muscles of the body is often referred to as gross motor behavior and movements of small muscles, particularly those of the arms and hands are referred to as fine motor behavior. The young child first learns to control the large muscles, or gross motor behaviors. Infant reaching responses are accomplished by movement from the shoulders with the arm and hand as a single unit. Later, reaching may involve only the arm and the hand and fingers. The child learns to use his whole hand to reach and grasp before he masters the use of his thumb and index finger.

Specialists in motor development have suggested a number of body activities which seem to be particularly important. *Balance* and *posture* provide the child with a base for moving and understanding the world.

Without stability and a means of maintaining a certain position, the child has difficulty learning new movements. He also would have difficulty understanding the relationship of other things to him. For instance, it is difficult to read or to throw a ball without good balance and posture. The child *moves to explore* objects and relationships between objects that are around him. As he moves, he is able to make *contact* with objects, grasping them, holding them, and letting them go, which provides an understanding of the object itself. The child also needs to know how to handle objects as they are presented to him—how to push them, or throw them from his body. The skills of catching, trapping, stopping, pushing, throwing and batting provides the child with an important understanding of himself and his affect on his surroundings.

Helping the child develop and plan his movements allows him to become much more independent and free. This freedom is also enhanced by providing opportunities for the child to move without direction or supervision. And movement and freedom are essential to proper growth and development of the child.

Language

Language is the ability to receive and understand information and show meaning through speech, gesture or writing.

Language is a body of sounds and meanings held by a group through which they can communicate.

One of the first and most important developmental tasks that a child undertakes is learning to talk. Learning to talk involves learning a language that is common to all members of a group.

Language is a learned behavior. The language the child learns is the language he sees (gestures) and hears (speech) about him. The child's environment, his experiences in it and his reaction to those experiences determine his language achievement.

Language growth begins with listening, recognizing, sorting, and remembering information seen and heard.

Language production begins with crying and babbling, followed by repeating sounds and finally the use of words and groups of words or sentences.

Children usually develop language at varying rates, but they usually develop language in an orderly systematic pattern. The developmental Checklist materials outline that pattern.

The language disordered, the hard of hearing and the deaf child will not necessarily follow an orderly sequence of language development. Special diagnostic help for these children is not included in the checklist. However, these children will benefit from this sequence of activities.

A child is not likely to acquire a new language skill unless it is rewarding to do so. The child whose wants are anticipated may be denied the need and opportunity to develop the skills necessary to make his wants and needs known. For example, if a parent always anticipates the child's thirst or responds to his gestures and hands him a glass of water, the child does not have the opportunity or need to learn to ask for a drink. However, the reason a child is delayed in language development may be more complicated than that of anticipating his needs. In the event of more complex problems, it would be advisable to seek additional help from physicians, teachers, psychologists, and/or speech and language therapists.

It is difficult, if not impossible, to separate language behavior from other aspects of development. Therefore, the Curriculum Cards are cross-referenced to comparable behaviors in other areas of development.

Socialization

Socialization skills are those appropriate behaviors that involve living and interacting with other people. During the preschool years, social behaviors are reflected in the level and manner in which the child relates to his parents, brothers and sisters, other adults, and his playmates. Living with other people is the basis of most behavior; in fact, it is difficult to think of a behavior occurring any time from infancy to adulthood, that occurs and is repeated in isolation from other people.

Socialization is learning to live with others and requires that the child differentiate right from wrong. The child learns this by being rewarded when he behaves in a way that other people decide is "right." The reward (hugs, smiles, goodies, praise), insures the behavior will be repeated. Behaviors that other people determine are "wrong" will be punished or ignored and that behavior will tend not to be repeated. However, which behaviors are rewarded and punished differ according to the people and the environmental events surrounding the child; i.e., he will need to know the difference between what mommy, daddy, grandma, teacher, and his playmate require of him and learn to act accordingly.

To repeat, praise and attention will maintain and strengthen the behavior; punishment and the withdrawal of praise and attention will decrease the behavior. In the process, the child will learn to work for the most positive of all social rewards: attention—a response of other people in his environment to him. All behaviors in language, self-help, socialization, motor, and cognitive areas are strengthened in this way.

Children learn through pleasure (rewarding, experiences), through imitation (copying rewarded behaviors of adults and other children), through participation (active involvement), and through communication—all social skills.

Examples of appropriate social behaviors during the preschool years are waving bye-bye, taking turns, sharing, following directions, smiling, playing peek-a-boo, respect for property rights, courtesy, cooperation in group play, etc.

DEVELOPMENTAL LANGUAGE SCHEDULES*

Language Skill	Language Age in Yrs. & Mos.	Suggested Activities for Development
1. Follows simple instructions	1:0	Group activities requiring response to instructions such as - stand up sit up close the door open the door turn around come here
2. Recognizes names of most common objects	1:4	Individual and group work using familiar objects or realistic toys. Use objects such as those listed below with the following questions and instructions: Where is the ____? Show me the ____. Give me the ____. Put the ____ in the box. ball, airplane, wagon, chair, table, bed, door, window, coat scissors, doll, apple, light, cat, dog, stove, shoe, spoon toy furniture, bottle, nipple, blanket, buggy, diaper, boy, girl, car
3. Recognizes parts of the body when they are named.	1:5	Individual and group work using familiar parts of the body to which the child points. Where is your hair? Where is your nose? Where is your mouth? Where is your eye? Where are your ears? Where are your arms? Where are your hands? Where are your feet? Where are your legs? Where are your fingers? Where are your toes? (Pram records are excellent for listening training.)

* from Mecham, M. "Developmental Schedules of Oral-Aural Language as an Aid to the Teacher of the Mentally Retarded," *Mental Retardation*, December, 1963.

4. Expressive vocabulary of 10 or more words	1:5	Group and individual work eliciting expression of nucleus words: "Need" situations should be structured which involve appetite stimuli, or toy or object stimuli, using words similar to the following: milk — water cookie — drink candy — mama ball — daddy doll — bed baby — car dog — airplane Program may also be set up with parent or guardian on the same words in which child is encouraged to say word before food or toy is given him.
5. Identifies common pictures when they are named.	1:10	Individual and group work centered around cloth-bound ABC booklets, etc. Home program with same. Parent or other responsible person should spend 15 or 20 minutes per day going through booklets and naming objects. She should have child point to pictures as she names them.
6. Talks in short sentences	1:11	Group activities centered around structured conversational situations such as: "Give me (name of object or food)." "I want (name of object or food)." "Hello, how are you?" "I'm fine." Puppets or toys with movable jaws are good stimuli for conversational activities.
7. Names few common pictures	2:0	Individual and group activities involving use of cloth-bound ABC booklets or large colored pictures which child has mastered in his *receptive vocabulary*. (Note: For older children, toys may be more stimulating than the ABC booklet.)

7. (cont'd)		In group activities, children may stimulate each other by taking turns naming pictures. In individual work, child is encouraged to name pictures in booklets or pictures of the objects and toys which he already names.
8. Expressive vocabulary of at least 50 words	2:5	Extension of activities under #4 at the one-and-a-half-year level. Words preferably should be selected which are also listed on a nucleus vocabulary list for children. Naming of words in the child's scrapbook is good practice.
9. Uses pronouns such as I, me, you, etc.	2:7	"Who sait it" games are good to stimulate use of pronouns. Child can be blindfolded and someone says a word. When the blindfold is removed, the child is asked, "Who said it?" Rather than naming the person, the child uses a pronoun. Sometimes the child can be asked to say it himself, and he then says, "I said it."
10. Begins to share and take turns	2:8	Children toward the end of the second year are sharing more and waiting their turn better than at an earlier age. In all activities, children can be encouraged to "Let Johnnie take his turn," or reminded that "Now it's George's turn," or asked, "Whose turn is it to put the flannel materials on the board today?"
11. Recognizes action in pictures	2:10	Action pictures in Jean Utley's *What's Its Name?* are excellent for stimulation in this activity. They may be used in activities where reward games can be played and may be incorporated into either group or individual activities.
12. Names one color	2:11	Matching colors precedes the naming of them and the child should have a thorough mastery of matching two or three of the primary colors before being expected to name them. He should also be expected to recognize the names of colors and point to the appropriate color when it is named. Simple reward games can be played for naming of colors. If child does not name color, there is no reward—negative or positive. If he does, he is given positive motivating reward.

13. Understands nucleus vocabulary	3:0	If child scores considerably low in his receptive vocabulary, group or individual activities should be employed which center around vocabulary development. *The Little Golden Dictionary* in color provides good stimulus pictures. Nouns should be mastered first, then verbs, and then adjectives and pronouns, etc. Scrapbooks should be kept by the child in which each day a new picture is added and learned as a recognition vocabulary word. Child does not need to be pressured to say all words, since recognition vocabulary is expected to be much larger than usage vocabulary. Five minutes of speech period each day can be devoted to scrapbook centered activities, having child point to pictures as they are named or having child show other children pictures which are named by teacher. New pictures and toys can be introduced also each week by either the teacher or the children. Real life experiences are imperative to enrich background for receptive vocabulary development. Trips to the farm, seashore, zoo, store, etc., either in real life, moving pictures, or by use of realistic toys, objects and picture books are good group or individual activities. Home assignments can be made for a trip to a place related to the experience unit which is being stressed in speech lessons. For example, if speech is centered around recognition of names of all types of farm animals, parents can be assigned to take the child to a farm and let him see farm animals in real life.
14. Auditory memory span of two words	3:0	Picture cards can be used in game-reward situations. Two or three pictures on a card are named—one second apart—and the child's task is to point to the pictures named. Card is kept from the child's sight until after pictures are named.

15. Performs three assignments	3:0	Toward the end of the third year, a child should be able to listen to three simple assigned tasks and keep them in mind long enough to carry them out. The child can be given two or three assignments at once frequently until he is able to retain them and carry them out. Such simple instructions as "Shut the door, go get your scrapbook, and sit down;" "Pick up the chalk, draw a circle, and erase it;" "Pick up the scrapbooks, give them to me, and take your chair," etc., are simple assignments which may be practiced. There should not be a formal unit planned in the lesson, for these activities, but opportunities should be seized upon whenever the occasion arises. Children whose memory span is not up to par should not be expected to master this skill until later.
16. Understands prepositions such as over, under, above, on, in, etc.	3:0	Individual work or group activities can involve hide-and-seek games where the object is placed in some position relative to other objects in the room. When found, the child or group can talk about whether it was "on," "under," or "above" the reference object.
17. Names most common pictures	3:0	Games can be played using nucleus vocabulary pictures. Speech games can be used in which the child is rewarded for finding the picture named. Such games as modified bingo, ladder-game, etc., are good. The following record-readers are good for building listening vocabulary for names of pictures and their actions: *Bozo at the Circus, Bozo has a Party, Bozo on the Farm, Bozo Under the Sea, Bozo and the Dog Show, Bozo's Jungle Jingles.* All can be obtained from Capital Records.
18. Spend no longer than seven or eight minutes, on the average, in any one activity	3:0	All units of instruction should be broken down into sub-units which employ different activities. No unit of activity should last more than seven or eight minutes at most. Three- and four-year old children get more fatigued just

18, (Cont'd)		sitting still than they do when being active. Most units of training will be more successful if the child is involved in doing something physically during the unit. This is true even in listening activities. It is much more effective to give children visual materials to look at as they are listening to records or stories and their attention will not be lost if the "visual aids" are colorful, real looking, and very familiar in their daily activities.
19. Most play and communication of the three-year-old is egocentric	3:0	This fact implies that most of the work with a child even in group activities, will be individual work between teacher and the child. There will be occasions, however, where the children will interact communicatively, but social interaction should not be forced. Children of this age like the opportunity to make choices and much negativism can be avoided in direct work by giving the child opportunities to make choices between two or more positive alternatives. Thus, a statement such as "Do you want to hear a story?" will be avoided because of the invitation to the child to say "no." The preferred statement would be "shall we hear 'The Three Bears' or 'Little Red Hen' today?" The children then simply make a choice as to which story they want to hear. Three-year-olds do not like strangers to pay attention to them as a rule. They resist party manners and social etiquette also at this age. These experiences should not be stressed unnecessarily in the main units of training and should be avoided with the resistive child entirely.
20. Relates experiences	3:5	Child brings something to the speech class and relates such things as where he got it, and what he does with it, etc., during a short period of "Show and Tell." If the teacher asks the parent what the child had done on a previous day, and interesting events can be called to the

20. (Cont'd)		children's attention and a child can be encouraged to tell about the events. "Show and Tell" periods can be held for about five minutes each day.
21. Has mastered the m, p, b, h and w sounds	3:5	Mastery of these sounds may be best achieved in the severely retarded child by avoiding segmented drills of isolated sounds and by orienting practice into functional life situations with repeated opportunity to engage in whole speech responses such as individual words with a good model ever present. Visual and auditory emphasis may enable the child gradually to change his inaccurate motor patterns for more accurate productions. Actual articulation therapy should be under supervision of a trained clinician.
22. Says at least one nursery rhyme or poem or sings a simple song or two with most of the essential detail	3:9	Finger plays are best source of memorization activity at this age. Children do finger plays until they have memorized them. These are not forced upon the child, but are encouraged among those children who have reached the present point in language maturation. Simple songs should be selected carefully because most songs are graded above the three-year level.
23. Auditory memory span of four words	4:0	For child below this skill level, an extension of No. 14 under the three-year level can be included in activity planning.
24. Names all primary colors accurately	4:0	Names all of the primary colors consistently and correctly. Color matching and vocabulary training can be coordinated by having children match a blue shirt with blue pants on a flannel board model. Red dress can be matched with red hat, etc. Children can be encouraged at home and in therapy to name colors of clothes, objects, pictures, etc., whenever an occasion arises.
25. Reads aloud by way of pictures	4:0	Group question-answer activities using the flannel board presentation of familiar stories such as the "Three Little Pigs" etc. Pictures are placed on the board in logical sequence and the children tell about the phase of the story being presented.

26. Mastery of the *y* (j), *k g, f,* and *d* sounds in addition to the ones listed above at three-and-a-half year level	4:6	Extension of No. 21 under the three-year-old level objectives.
27. Draws legible pictures and identifies them verbally	4:8	Short period can be devoted in speech activities to drawing. Copy work should precede voluntary drawing. Pictures within the scope of the four-and-a-half year old are: circles squares house man (outline) wagon face (with eyes, nose and mouth) Pictures are not expected to be artistic nor in much detail, but are merely recognizable by the teacher.
28. Enjoys talking about his friends and home activities	5:0	Participation in such topics as pets, weather, birthdays, holidays, and home activities are helpful.
29. Uses speech as a social tool mainly	5:0	Group activities pay dividends at this age in communication-centered situations. The following activities are examples of situations which encourage social etiquette. 1) Serving as hosts and hostesses to each other and to children of other ages. 2) Greeting each other. 3) Saying "thank you" and "please", etc., upon proper occasions. 4) Dictating to the teacher a letter to be sent to a factory, zoo, or store manager expressing gratitude for making a visit pleasant, or to a parent for helping with the transportation.

29. (Cont'd)		5) Group discussions in the way of planning to go on trips to such places as the firehouse, the toy store, the seashore, or the lumber yard. Afterward, discuss what the children have seen and done on the trip.
30. Expresses himself in dramatic play activities	5:0	Dramatization of everyday experiences like getting supper, or washing dishes. Dramatization of stories such as the "Three Little Pigs" and nursery rhymes like "Little Jack Horner." Using stick puppets to tell nursery rhymes like "Old King Cole" and stories such as "Three Billy Goats Gruff." For older children, real life experiences may be dramatized which are of a more mature interest level than nursery rhymes.
31. Relates fanciful tales	5:3	Creative dramatics can be utilized as an outlet for children of this age in their expression of the creative and the imaginative. Individual interests and abilities of the child must be considered in stimulating creative dramatics. Seasonal and adventural topics or pictures may be used to set the spark in creative play. Unit of planning may be called "let's pretend." The children can then make up stories or pretend to play with a fair degree of freedom. Older children may wish to be constructive in creating a play, planning the characters, plot, scenery, etc., but the five-year-old will not usually enjoy such formalized planning.
32. Counts to thirty	5:9	Counting practice can be carried out mainly at home. Parents can obtain *Little Golden Counting Books* at most bookstores. Occasionally, opportunity presents itself in speech for a child to count, but no formal unit is incorporated into the lesson plan for this activity.
33. Answers telephone, takes simple messages and conveys it to adults	6:3	Telephone play situations may help the child to become familiar with use of the telephone. Teacher can make a reality experience for child by calling him at his home after school hours. Telephone etiquette can be taught in group activities in which structured responses are

33. (Cont'd)		given to the child as they call each other on play phones. Children in the class can be encouraged to call each other on the phone.
34. Tells simple stories	6.6	Story completion activities are best to gradually enable child to tell whole story. Flannel board materials are good stimuli. Child completes parts of the story which are most familiar and which are easiest for him. Example, "Once upon a time there were three _____." Then as the teacher or a child places pictures of bears on flannel board, "One was the _____ bear, one was the _____ bear, and one was the _____ bear." Child fills in story as pictures are put in place. Gradually the children will learn to fill in more until they can tell the entire story without any visual or auditory cues. For older children, a story on a more mature interest level will probably be better than fairy tales for young children.

Development Sentence Types*

Pre-sentence utterances were scored according to the categories developed by Laura Lee.

Single Words

Noun

car, Daddy, kitty-cat
truck, Mommy, Santa Claus
cookie, girl, hot-dog

Phrase structure
Plural: *books, cars, men*
Transformations
Pronoun: *me, something, nobody*
Question: *car? truck (right)?*

Designator

here, there
this, that
it

Phrase structure
Plural: *those, these*
Transformations
Question: *this? that? here? there?*

Two-Word Combinations

Noun Elaboration

Noun phrase
Article: *a car, the truck*
Possessive: *Daddy car, Billy truck*
Quantifier: *more car, other truck*
Adjective: *big car, dirty truck*
Attributive: *baby bear, police car*
Phrase structure
Plural: *the cars, more trucks*
Additive: *car truck, Mommy Daddy*
Adverb: *now car, truck too, car again*
Subject-object: *car garage, Mommy window*
Transformations
Pronoun: *this one, my truck, her cookie*
Negative: *not car, not truck*
Conjunction: *and car, and truck*
Question: *a car? another truck (OK)?*
Wh-question: *what car? which one?*

Designative Elaboration

Designator + noun
here car, there truck
this car, that truck
it car, it truck
Phrase structure
Plural: *these cars, those truck*
Adverb: *this now, that again, it too (there, now, here, again = fragments)*
Transformations
Pronoun: *here something, there one*
Negative: *not this, not that (not here, not there = fragments)*
Conjunction: *and this, and that (and here, and there = fragments).*
Question: *that truck? this car (right)?*
Wh-question: *what this? who that?*

Constructions

Noun phrase
my big car, some more truck, a red box
Noun phrase + prepositional phrase
the car in front, the spot on the floor
Quantifier + prepositional phrase
all of them, some of the other cars
Phrase structure
Plural: *some other cars*
Adverb: *now the car, other truck too*
Additive: *the car the truck*
Subject-object: *the doggie window*
Transformations
Pronoun: *his other truck, all of mine*
Negative: *not the car, not that one*
Conjunction: *and the car, car and truck*
Question: *the other car? this one too (huh?)*
Wh-question: *what big car? which other one? how about that one? how many cookies? how much milk?*

Designator + noun phrase
here another car, there a truck, this a red car, that my truck, it a big car, it my truck
Phrase structure
Plural: *here some more cars*
Adverb: *here some more cars*
Additive: *there Mommy Daddy*
Transformations
Pronoun: *that somebody car, here his car*
Negative: *that not car, this not a truck*
Conjunction: *here a car and truck*
Question: *that a car? this a car (right?)*
Wh-question: *who that boy? what that one?*

... continued

* from Tranchan, C., & Pederson, J. *Normal Language Development: The Key to Diagnosis and Therapy for Language Disordered Children*, p. 6, 1976.

Developmental Sentence Types (continued)

Single Words

Adjective

big, pretty, broken, fixed
one, two, more
up, down, on, off, in

Phrase structure
Transformations
  Pronoun: *mine, his*
  Question: *red? big (huh?)*

Verb

sleep, eat, walk, fall
(look, lookit + imperative sentence)

Phrase structure
  Tense markers: *going, fell*
Transformations
  Negative: *can't, won't (don't* + imperative sentence)
  Question: *see? eat (OK?)*

Vocabulary Item

yes, no, OK, sh, hey, hi
bye-bye, night-night, ah
bow-wow, bang-bang, moo

Phrase structure
  Adverb: *again, now, too*
Transformations
  Conjunction: *because*
  Question: *huh? right? OK?*
  Wh-question: *what? who? where? when? how? why?*

Two-Word Combinations

Predicative Elaboration

Noun + descriptive item:
  car broken, truck dirty
  light off, coat on
  car there, truck here
Phrase structure
  Plural: *cars here, hats on*
Transformations
  Pronoun: *that pretty, it big, something here, another on*
  Question: *car broken? it gone (right?)*
  Wh-question: *where car? what here? who there?*

Verbal Elaboration

Verb + noun: *see car, open box*
Verb + particle: *fall down*
(Noun + verb = sentence: *baby sleep, that go, it all*)
Phrase structure
  Tense markers: *saw car*
  Plural: *eat cookies, see cars*
  Adverb: *eat now, fall too*
Transformations
  Pronoun: *see it, find one*
  Negative: *not fall, can't go*
  Conjunction: *and sleeping*
  Question: *see it? go home (OK?)*
  Wh-question: *where go? what take? what find? (who go? what come?* = sentence)
  Infinitive: *wanna go, gonna go*

Fragments

right here, over there,
all gone, all clean
Phrase structure
  Prepositional phrase: *for me, in car*
  Plural: *on chairs*
  Adverb: *too big, up now, there now, here again*
Transformations
  Pronoun: *to you, in it*
  Negative: *not big, not here*
  Conjunction: *and big, but dirty, and here*
  Question: *in here? all gone (huh?)*

Constructions

Noun phrase + descriptive item
  the car broken, a truck dirty
  this light off, red coat on
  other car there, a truck here
  car in garage, hat on head
  Spot a good dog, you bad boy
Phrase structures
  Adverb: *light off now, car here too, truck too dirty*
Transformations:
  Pronoun: *he bad boy, it off now*
  Negative: *this not broken*
  Conjunction: *car and truck here*
  Question: *it off now? car over there (huh?)*
  Wh-question: *where that one? who in car? what color car? what in here?*

Verb + noun phrase
  see a car, want a cookie
Verb + particle + noun
  fall down floor, go in barn
  (Noun phrase + verb = sentence: *the car go, a boy eat*)
Phrase structure
  Tense markers: *goes in barn*
  Adverb: *see car now, go in too*
Transformation
  Pronoun: *want it now*
  Negative: *not fall down*
  Conjunction: *and find car*
  Question: *see that one? eat more cookies (OK?)*
  Wh-question: *where put car? what take out? what find there? what doing to car?*
  Infinitive: *wanna see it, gonna go home, gotta find it*

right over there
over here now
Words in series:
  1, 2, 3, 4, etc.
  dog, cow, pig, etc.
Phrase structure
  Prepositional phrase: *in the car, for the boy*
  Plural: *on the chairs*
  Adverb: *not in it*
Transformations
  Pronoun: *on my head*
  Negative: *not in it*
  Conjunction: *and for me*
  Question: *in here too? in the car (right?)*

Developmental Stages of Normal Speech and Oral Language

Summary of Early Normal Speech and Oral Language Developmental Stages*

Age	General Characteristics	Usable Speaking Vocabulary (No. of Words)	Adequate Speech Sound Production
Months			
1-3	*Undifferentiated crying.* Random vocalizations and cooing.		
4-6	*Babbling.* Specific vocalizations. Verbalizes in response to speech of others. Immediate responses approximate human intonational patterns.		
7-11	Tongue moves with vocalizations (lalling). Vocalizes recognition. Reduplicates sound. Echolalia (automatic repetition of words and phrases).		
12	*First word.*	1-3	All vowels
	One-word sentence stage. Well-established jargon. Uses nouns primarily.	18-22	
Years			
2	*Two-word sentence stage.* Sentences functionally complete. Uses more pronouns and verbs.	270-300	
2.5	*Three-word sentence stage.* Telegraphic speech.	450	h, w, hw
3	Complete simple-active-sentence structure used. Uses sentences to tell stories which are understood by others.	900	p, b, m
3.5	*Expanded grammatical forms.* Concepts expressed with words. Speech disfluency is typical. Sentence length is 4-5 words.	1200	t, d, n
4	Excessive verbalizations. Imaginary speech.	1500	k, g, ng, j

... continued

Summary of Early Normal Speech . . . (continued)

Age	General Characteristics	Usable Speaking Vocabulary (No. of Words)	Adequate Speech Sound Production
5	*Well-developed and complex syntax.* Uses more complex forms to tell stories. Uses negation and inflectional form of verbs.	2000	f, v
6-8	*Sophisticated speech.* Skilled use of grammatical rules. Learns to read. Acceptable articulation by 8 years for males and females.	2600+	l, r, y, s, z, sh, ch, zh, th, consonant blends

*from Hull, F., & Hull, M. "Children with Oral Communication Disabilities," from Dunn, L. *Exceptional Children in the Schools*, p. 301, 1973.

Mother's Mini-Text on One Kind of Learning Theory

OR

How to Survive the Literature

Learning Theory

Introduction

It is very difficult to begin a course of study which is primarily concerned with the educational problems of exceptional children, without having some background in the most widely accepted explanation of children's learning, namely, operant conditioning. The literature of exceptionalities is permeated with the jargon of this learning theory; and many techniques in teaching and classroom management are based on its principles. Operant conditioning is held in such wide esteem that some professionals simply refer to the theory and its subsequent techniques as "learning theory," forgetting completely that there are many other theories to explain learning.

Because operant conditioning is so widely held as *the* explanation of learning, and its offspring "behavior modification" is so widely practiced, it is imperative that every professional's understanding of the principles and terms of this theory be maximized. This maximization of knowledge is important for two reasons:

1) A working knowledge of the terms and principles of operant conditioning are necessary in order to understand much of the current literature in many exceptionalities, especially in the areas of the mentally retarded and the emotionally disturbed.

2) An understanding of operant conditioning and its practical applications is necessary if a special educator is going to be a contributing member in a school system.

This mini-text is not designed to provide you with all you need to know in order to understand operant conditioning and behavior modification. It is merely a tangible beginning, from which you must proceed to a more thorough understanding.

Conditioning

Reflexive Responses

Under certain conditions, our bodies respond to special physical events in our environment in special ways. A light will cause the pupil of an eye to contract. Lemon juice placed on the tongue will cause the

mouth to water. A blow to a special place on the knee will cause the leg to jerk upwards. In short, the light, the lemon juice and the blow are physical events which cause specific muscular or glandular activities in the body. The light *elicits* constriction of the pupil of the eye; the lemon juice *elicits* saliva; the blow *elicits* rapid movements of the muscles of the leg. These physical events are called stimuli, and the specific activities which were elicited are called *responses*. Each of the situations themselves are called stimulus-response relationships and can be depicted as S → R. (Note: A relationship does *not* have to be reflexive to be depicted as S → R.) Some of these reflex relationships are present at birth. Some that are present at birth disappear as the infant grows older. Reflexes in humans are primarily involved in maintaining the internal economy of the body or protecting it against harmful external conditions.

Conditioned Reflexes

A stimulus which is not a part of a reflex relationship becomes a *conditioned stimulus* (CS) for the response, when the stimulus is paired at the same time with the stimulus of the reflex relationship. The stimulus of the reflex relationship is called the *unconditioned stimulus* (US). This relationship can be depicted as follows:

(1)			(2)	
paired together in "temporal contiguity"	US	R	light	pupil constriction
	CS		buzzer	

The new relationship is called a conditioned reflex and the procedure is known as *respondent conditioning* or *classical conditioning* (interchangeable terms). Of course, the most commonly known example of this is Pavlov's dog who was conditioned to salivate at the sound of a bell, by pairing the sound of the bell with the presentation of meat to the dog. After repeated pairings, the dog would salivate at the presentation of the sound of the bell alone.

This kind of conditioning does not produce permanent effects. If the conditioned stimulus is presented frequently in the absence of the unconditioned stimulus, the conditioned stimulus loses its eliciting properties. This loss of the ability of a stimulus to elicit a response is called *extinction*.

It must be noted that in both reflex responses and conditioned reflexes the stimulus precedes the response. Though the underlying principle of classical conditioning, *temporal contiguity*, is essentially the *same* in operant conditioning, there is a critical difference. In classical conditioning the stimulus *precedes* the response. In operant conditioning the stimulus *follows* the "response."

Operant Conditioning

Most of our behaviors are non-reflexive and are the result of environmental *consequences*. An "operation" (a behavior) is performed on the environment. *The continuation, change, or extinction of this operation is a consequence* of environmental stimuli.

The kinds of stimulus events which are consequences of operations on the environment can be described as follows:

1) Positive reinforcers—the behaviors which preceded these stimulus events have a *high probability* of occurrence under similar conditions in the future ("rewards", something "good").

2) Negative reinforcers—(also called *aversive stimuli*) the behaviors which preceded this *removal* is more likely to occur under similar conditions in the future (unpleasant, something "bad"). *Note*: The presentation of a positive reinforcer contingent upon a response is called *positive reinforcement*. The removal of a negative reinforcer contingent upon a response is called *negative reinforcement*. *Both* are called operant conditioning, and *both* increase the future frequency of the response which preceded them.

3) No consequence stimuli (also called neutral stimuli) response behaviors cease if they are followed by no consequence stimuli. The procedure of allowing behavior to occur without reinforcement is called *operant extinction*.

Shaping

Operant responses must first occur before they can be followed by reinforcement stimuli. As a result, it might be assumed that operant conditioning is a useless tool in the development of new behavior. This assumption is false, however, for by the reinforcement of successive approximations of the desired behavior (each reinforcement dependent on the more clearly delineated approximation of the behavior than the previous approximation) will culminate in the production of the desired behavior. This reinforcement of successive approximations is called "shaping."

Aversive Control

When a response can terminate an already present aversive stimulus it is called an *escape procedure*. This is negative reinforcement and operant conditioning of the response is the result. When a behavior can prevent or delay the *onset* of an aversive stimulus, it is called an avoidance procedure. This, too, is negative reinforcement and operant conditioning, and will result in the development and maintenance of operant behavior.

Behavior Modification

Behavior modification is the technical application of the principles of operant conditioning to the changing of behaviors. For our purposes, it is a technique used in schools to decrease undesirable behaviors or increase desirable behaviors in school children. It is widely used in special education. An example of behavior modification procedures is as follows:

1) Define the terminal behavior which is desired (behavioral objective).

2) Define the successive approximations necessary to the development of the behavior. These are the smaller behaviors which will lead from what the child does now to the terminal behavior. (Breaking down into smaller steps.)

3) Find out what is reinforcing to the child.

4) Give the reinforcer to the child immediately and frequently, contingent upon his successful performance of the successive approximations, leading ultimately to the successful performance of the desired terminal behavior.

Operant Definitions

Acceleration—behavior is accelerated when its rate of occurrence increases.

Aversive Stimulus—a stimulus whose termination increases the frequency of the performance. An aversive stimulus might also be defined as a stimulus which maintains a stable avoidance behavior.

Avoidance Behavior—a performance which increases in frequency because it postpones the appearance of an aversive stimulus.

Behavioral Model—all behavior is learned. Behavior is controlled by its consequences. In the behavioral model we deal with behavior we can see or measure. After behavior has been identified and reinforcers located, behavior can be modified.

Chaining—two or more performances linked by common stimuli. One performance produces the conditions which make the next possible. The stimulus linking the two performances serves both as a conditioned reinforcer maintaining the topography and frequency of the first performance, and as a stimulus setting the occasion for the second.

Conditioned Reinforcer—(secondary reinforcer) is established by pairing a stimulus with a primary reinforcer. It then takes on the reinforcing qualities of the primary reinforcer.

Conditioned Response—the change in the organism's behavior elicited by a conditioned stimulus.

Conditioned Stimulus—a stimulus which acquires the property of eliciting a previously unconditioned response.

Contingency—a structured relationship between the delivery of a subsequent event and the behavior prec-ding these events.

Differential Reinforcement—reinforcement of behavior in the presence of one stimulus situation and not reinforcing it in the presence of other stimulus situations or reinforcing two different responses at different levels.

Escape Behavior—responses which terminate aversive stimulation are called escape behavior.

Extinction—the removal of reinforcement for a response.

CRF—Continuous Reinforcement—reinforcement following each defined response unit. A schedule of 1:1.

Discriminative Stimulus—the particular occasion (stimuli) on which a performance is reinforced, in contrast to other occasions (stimuli) on which this performance is not reinforced. (S^D)

Fading—a procedure for gradually changing a stimulus controlling an organism's performance to another stimulus.

Fixed Interval—a schedule of reinforcement in which the first performance that occurs after a fixed period of time elapses is reinforced.

Fixed Ratio—a reinforcement schedule in which a fixed number of performances (counted from the preceding reinforcement) is required for reinforcement.

Free Operant—behavior which the organism seems to possess which occurs without any known antecedent behavior can eventually be shaped by differential reinforcement.

Functional Analysis of Behavior—description of the interrelationship between the operant behavior and environmental events.

Generalized Reinforcer—a type of conditioned reinforcer which has the additional property that its effectiveness does not depend upon a single kind of deprivation.

Incompatible Response—a response which prohibits the performance of another response at the same time.

Intermittent Reinforcement—occurs when reinforcement is omitted following some emissions of an operant performance.

Latency—the length of time between the presentation of the S^D and the operant performance it controls. In the case of a reflex, the latency may be the interval between a conditioned stimulus and the conditioned response.

Multiple Schedule—two or three schedules of reinforcement running concurrently.

Neutral Stimulus—a stimulus which is to be established as a conditioned stimulus which did not initially evoke or elicit the unconditioned response.

Negative Reinforcement—the removal of an aversive stimulus upon emission of a response.

Operant Behavior—behavior influenced by its consequence—usually motor response—voluntary—learned.

Positive Reinforcement—presentation of a consequence for operant behavior which increases the probability of that behavior reoccurring.

Primary Reinforcer—those reinforcers which are necessary for human survival.

Punishment—a procedure in which an operant performance is followed by an aversive stimulus. The response is suppressed.

Reflex—a relationship between an eliciting stimulus and an elicited response.

Reinforcement—when a stimulus follows a performance reinforcement has occurred.

Reinforcer—or reinforcing stimulus, is the event which increases the frequency of the performance it follows.

Respondent Behavior—controlled by autonomic nervous system. The critical controlling events occur before the behavior—smooth muscle, reflexive.

S^Δ —represents the particular occasion on which a performance will not be reinforced, in contrast to S^D's which will be reinforced.

Schedule of Reinforcement—statement of the contingencies on which reinforcement depends.

Shaping—consists of reinforcing closer and closer approximations of the desired behavior—is used when the operant level is not appreciably above zero.

Stimulus Control (S^D)—a differential form or frequency of a performance in the presence of one stimulus which is not evident in the presence of another.

Successive Approximation—used to condition a performance which is not currently in the organism's repertoire. Some performance which is an approximation to the desired behavior and which the organism is already emitting is first reinforced. Thereafter, reinforcement occurs after those performances which are in the direction of the desired performance.

Time-Out—an operation which removes the subject from all sources of reinforcement.

Unconditioned Response—behavior elicited by an unconditioned stimulus.

Unconditioned Stimulus—a stimulus which has properties of eliciting a response implicit in it.

Variable Ratio—a schedule of intermittent reinforcement in which reinforcement follows a variable number of performances. VR10 = ten performances on the average are required for each reinforcement.

Variable Interval—a reinforcement schedule in which reinforcement is contingent upon the passage of time. Variable interval would mean that the amount of time is varied around an average.

Epilogue

It must be remembered that this mini-text is only a very brief description of the principles of operant conditioning and its application to education. Out of fairness, the whole subject area must be examined in far greater depth. In addition, it must be recognized that I have not addressed myself to the implications and consequences of the application of these principles to education. In no way should this document be misinterpreted as my personal educational philosophy, or the theory of learning to which I personally. adhere. At the same time, however, it must be understood that operant conditioning and behavior modification are techniques that work, and work very effectively.

Weekly Progress Report
(Adapted from Portage Project)

SERCC Preschool Program Date: Oct. 17/77

Child's Name Ronald

Parent Partner Lou

I. PRESCRIPTION FOR WEEK

Developmental Area	Activity (Behavior Description)	New or Contd.	Original Baseline	Week's Post-Basal	Credit
Language (Cognitive)	Ronald will learn to place shapes in correct space - learn color and shape names - 1 trial for each activity	new	0/3	3/3	✓
Language	Ronald will re-tell 2 short stories - "Pigs" - "Horse" - a memory activity	new	0/2	2/2	✓

II. HOME VISIT ACTIVITIES

We reviewed some of the previous activities that Ronald did, specially colors. I showed his mother how to read the stories and how to help Ronald re-tell them. There is a scarcity of books in this family.

III. TEACHER-CHILD RELATIONSHIPS

Ronald likes doing activities that involve toys.

IV. PARENT'S CONCERNS Mother asked about a "Social Club" for family activities in Saskatoon. I'll try to find out more about this club.

V. ESC INFORMATION (Dr. appointments, clinic visits, etc.)

SEECC Preschool Program

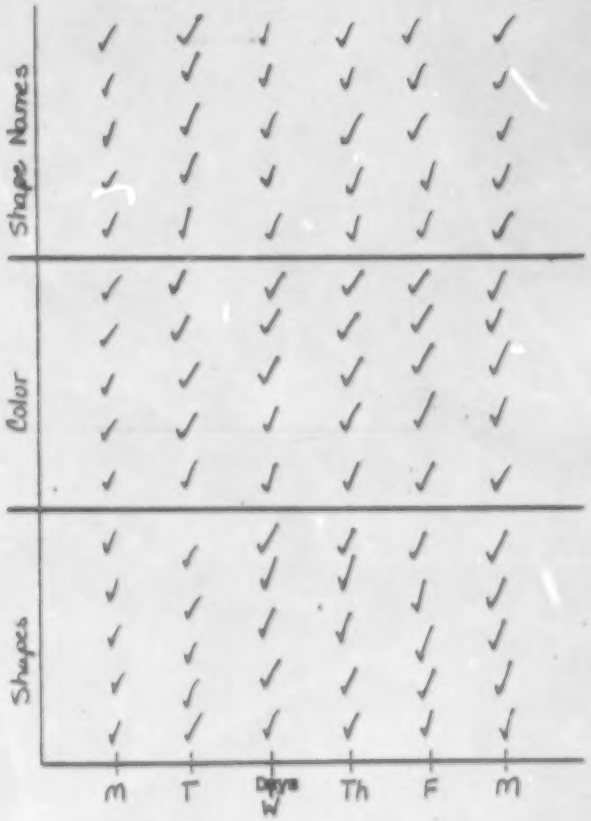
CREDIT: 1 yes ___ no

Child's Name: Ronald

Home Teacher's Name: Rose

Week of: Oct. 17/77

ACTIVITY CHART



BEHAVIOR

Ronald will learn to place shapes in correct spots plus learn colors and shape names

- 1 trial for each activity

NUMBER OF:

: shapes he names correctly and times he places them

DIRECTIONS:

1. Show formboard to Ronald.
2. Name the shapes, then the colors.
3. Remove shapes and show Ronald how to replace them
4. Ask Ronald to place forms in formboard
5. Always praise Ronald.

HRCC PRESCHOOL PROGRAM (adapted from Portage Project)

Credit: ✓ yes _____ no

Child's Name: Ronald

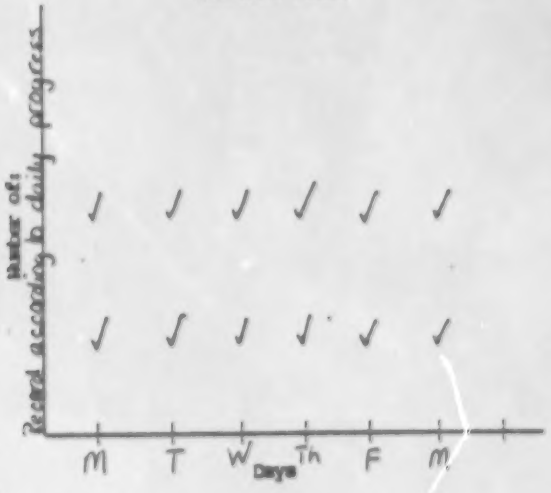
Parent Partner's name: Lori

Week of: Oct 17/77

BEHAVIOR:

Ronald will re-tell short stories
- "Pigs" - "Horses"
- a memory activity

ACTIVITY CHART



DIRECTIONS:

1. Read stories to Ronald
2. Describe pictures while using the words on each page.
3. Encourage Ronald to give his own descriptions
4. Ask him to teach his younger sister new words.

SERCC PRESCHOOL PROGRAM (adapted from Portage Project)

BEHAVIOR EVALUATION

Period Oct. 3 - Nov. 28/77

Child Ronald

Teacher Rose Kaatucki

SPECIFIC GOAL	DATE	DATE ACCOMPLISHED					
re-tell story & complete sentences in "Baby Animal Book"	Oct. 3		Oct. 6				
Read "Baby Animal Book"							
trace circle shape from cardboard 4/4 x's/day	Oct. 3			Oct. 10			
learn to count 1-4 3 trials/day 4/4 x's	Oct. 3		Oct. 10				
will name the colors & place rings on stand 2x	Oct. 10	Oct. 17					
will trace large letters A 3 x's/day	Oct. 10			Oct. 17			
learn shapes, correct spoc & spacc 1 trial	Oct. 17	Oct. 24					
will retell 2 short stories Pig" - "Horse"	Oct. 17		Oct. 24				
will identify fruit & color 1 trial/day	Oct. 24	Oct. 31					
will name pictures, finish the sentences & answers the questions "Ladybird Book I"	Oct. 24	Oct. 31					
stack nut & screw it on bolt 2 color/day	Nov. 7	Nov. 14					
will print 1,0,2 on large sheet of paper	Nov. 7			Nov. 14			
will color pictures of fruit	Nov. 14/77			Nov. 21/77			
	12	5	3	4			

COMPLETE	DISCONTINUE	NOW	SELF-HELP	SOCIALIZATION	MOTOR/CHILD

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APPENDIX B

Follow-up Inservice Training

Year 1 of the Project

A. **Special Events**

July 14, 1976	Director and Co-ordinator visited Alvin Buckwold Centre for discussion with Dr. Zaleski, Wilma Clark and Eigil Jensen.
July 16, 1976	Co-ordinator observed Infant Stimulation Program at Alvin Buckwold Centre.
July 19, 1976	Director, Co-ordinator and Eigil Jensen discussed the parent training program of the Alvin Buckwold Centre.
July 30, 1976	Director, Co-ordinator met with Director of Dr. Piper and Mrs. MacDonald of the Saskatoon Rural Health Region and Eigil Jensen of Alvin Buckwold Centre.
October 28, 1976	Co-ordinator met with Lynn Brewster of Ear, Nose and Throat Department of the University Hospital. Discussed their preschool program for hearing impaired children.
November 10, 1976	Co-ordinator and Parent Partners met with Sharon Bates, CORE Services Mental Retardation worker.
November 30, 1976	Co-ordinator met with Mrs. Busiak of Children's Rehabilitation Centre. Later, Co-ordinator and Parent Partners met with Dr. Kahlil, Director of the Centre and with speech therapist, physiotherapist, occupational therapist, and social worker of their staff.
January 31–February 4, 1977	Co-ordinator attended CEC Workshop on Early Childhood in Phoenix, Arizona.
February 18, 1977	Eigil Jensen discussed the parent training program of the Alvin Buckwold Centre with Parent Partners and Co-ordinator.
April 19-21, 1977	Co-ordinator attended Portage Project Workshop in Regina.

April 22, 1977	Co-ordinator and Parent Partners attended seminar on multiply handicapped children at John Dolan School.
May 10, 1977	Director and Co-ordinator attended planning meeting concerning early childhood services with other service delivery agencies.
September 9, 1977	Director and co-ordinator attended workshop with parents and other professionals in Yorkton on relationships between parents and professionals.

B. Friday morning sessions (October 1976 to June 1977)

1. recording behaviour
2. observing children
3. task analysis
4. solving of specific child-related problems
5. assessment
6. special areas
   a. normal children
   b. multiply handicapped
   c. stuttering
   d. special problems of twins
   e. cerebral palsy
   f. hearing impairment
   g. language deviance
   h. language delay
   i. Down's Syndrome
   j. culturally different children
   k. "at risk" children
   l. problems of children whose parents are handicapped
   m. disadvantaged families
7. "feedback" from co-ordinator comments on Parent Partner lesson plans.

Year 2 of the Project

A. Special Events

September 29-30, 1977	Director and Co-ordinator attended annual conference of Canadian Association on Mental Retardation in Regina.
October 14, 1977	Co-ordinator and Parent Partners toured Saskatoon agencies for educationally handicapped children.
November 25, 1977	Co-ordinator and Parent Partners visited Alvin Buckwold Centre again for an "up-dating."
January 20, 1977	Co-ordinator and Parent Partners visited Children's Rehabilitation Centre again for an "up-dating."
January 26, 1977	Director, Co-ordinator and Parent Partners attended the conference on Early Identification of Developmental Problems in Infants and Young Children, University of Saskatchewan.
February 2-3, 1978	Co-ordinator attended the Early Childhood Education Council National Conference in Winnipeg.
March 10, 1978	Co-ordinator and Parent Partners discussed speech and language with Lois Hunter, speech pathologist, University Hospital.
March 3, 1978	Co-ordinator and Parent-Partners visited Estey School, Saskatoon, to observe TMR children.

B. Friday morning sessions (September 1977 to June 1978)

1. continuation of topics from previous year
2. continuation of solving of specific child-related problems
3. report writing
4. developmental exercises for speech and language
5. behaviour management
6. parent-professional communication
7. stages of adjustment for parents of handicapped children.

APPENDIX C

List of Films

1. Nine day training session

Becky	color	15 min.	1970
Becky	color	15 min.	1970
Cognitive Development	color	18 min.	1973
Development	color	30 min.	1971
Genesis	color	25 min.	1971
Jennifer is a Lady	color	24 min.	1972
Language Development	color	20 min.	1973
Principles of Development	B & W	15 min.	1955
Terrible Twos and Trusting Threes	B & W	22 min.	1950

2. Additional films

Child Behaviour Equals You	color	14 min.	1972
Readin and Writin Ain't Everything	color	25 min.	1975

APPENDIX D

Materials Used by Parents and Parent Partners in the Preschool Project

The materials listed below are those which were used in the Saskatoon Preschool Project and which were found useful. However, the list is not intended to be narrowly prescriptive, but rather as providing general guidance for anyone intending to set up a program with similar goals. Much of the most useful material consisted of everyday things contributed to a central pool by participants in the program. In purchasing commercial materials for use in an early intervention program, at least three criteria should be kept in mind. The materials should be:

1) safe for young, handicapped children to use;

2) virtually indestructible; and

3) capable of being used with versatility. That is, prefer to get materials which can be used for a variety of purposes. For example, blocks of different sizes and colours can be used for counting, learning and discrimination of size, weight and colour, for building (thereby training visual-motor co-ordination), imagination, etc. A (probably more highly priced) object that has one specific purpose or function only is generally not recommended.

1. Commercially produced materials used in the project

Toys	Manufacturer
Attribute Blocks	Oadby, England
Busy Blocks	Tupperware
Camping Toy	Lego
Colored Peg Board	Brio, Sweden
Colored Rings and Pegs	Fisher-Price
Cowboys and Indians	Plastoy Co., Ltd.
Creative Blocks	Fisher-Price
Creative Sewing Cards	Holly Hobbie
Creative Tinker Toy	Irwin Toy Ltd.
Crib and Playpen Chime Ball	Fisher-Price
Daisy Chain Shapes	Kiddiecraft
Dishes	Morrette Distributors

Toys	Manufacturer
Flannelgraphs	Instructo
Goldilocks	
Three Billy Goats Gruff	
Little Red Riding Hood	
Nursery Rhymes	
Gingerbreadman	
Galley Bag	Toyo Importing
Jumbo Peg Board and Pegs	Ideal
Lite-Brite	Hasbro Industries
Magnetic Board	Questor Educational Products
Magnetic Board	Playskool
Musical Chime Rattle	Bedford Industries
Nerf Balls (1 large, 1 small)	Nerf
Nesting toy	Ambi Toys, Holland
Number Pegboard	Ideal
Playdoh	Parker Brothers
Queen Buzzy Bee	Fisher-Price
Round Pegs (large)	Ideal
Rhythm Instruments	Ideal
Shape-O	Tupperware
Sio Bus	Sio, Holland
Viewmaster	GAF
Workbench and tools	Ideal
Workbench	Playskool
Wooden Shapes and Blocks	Playskool
Wood Beads	Ideal
Miscellaneous	
color markers	
harmonica	
plastic blocks	
plastic fruit	
plastic people	
plastic rings	
plastic trucks	
skipping rope	
zylophone	

Games	
Disney Spin	Parker Brothers
The Game of Match Me	Hayes School Publishing Co.
Looney Tunes Card Game	Looney Tunes
Lotto Game	Edu Cards
Tic-Tac-Toe	Fisher-Price

Puzzles — many wooden or rubber puzzles of varying complexity.

Records

The Adventures of Ginger	Lumley Productions
Bible Stories for Children	Alan Levingston
Playhour (2)	Robert Mach
Show and Tell	Golden Records
Square Dancing Music	Capitol Records
Tales of Uncle Remus	Capitol Records
The Three Billy Goats Gruff	Robert Mach
Miscellaneous records	Walt Disney Productions

Books — various

2. Materials Made or Collected by Parent Partners

box of everyday items
box of pictures of corresponding items
muffin tins, egg cartons etc. for sorting
- size
- color
- shape
- quantity
- same/different
- big/little

catalogues
large wooden blocks
large wooden peg board and pegs
puppets
dress-me doll
magnetic fishing rod and paper clip "hooks"
large pictures
flash pictures
follow the path cards (L to R progression)
sound picture books
stacking toys
old workbooks for pictures
picture sequencing
cut-out letters
magazines for cutting, pointing etc.
"matching" objects
"matching" pictures
bean bags

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